

CONTROL-M/Tape User Guide



Supporting

CONTROL-M/Tape version 6.3.01

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Contacting BMC Software

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Before contacting BMC

Have the following information available so that Customer Support can begin working on your issue immediately:

- product information
 - product name
 - product version (release number)
 - license number and password (trial or permanent)
- operating system and environment information
 - machine type
 - operating system type, version, and service pack or other maintenance level such as PUT or PTF
 - system hardware configuration
 - serial numbers
 - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the issue
- commands and options that you used
- messages received (and the time and date that you received them)
 - product error messages
 - messages from the operating system, such as `file system full`
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About This Guide

This guide is the basic publication on how to use CONTROL-M/Tape software. It should be used by any person who wants to manage removable media using CONTROL-M/Tape.

This guide contains detailed information about all CONTROL-M/Tape functions and facilities. It is divided into the chapters listed below. It is recommended that the guide be read in the order specified.

Chapter 1, "Introduction"

Overview of key concepts used by CONTROL-M/Tape, this chapter provides an overall description of the CONTROL-M/Tape environment and its integration into your operations environment.

Chapter 2, "Online Facilities"

Walkthrough of the CONTROL-M/Tape Online facility. All CONTROL-M/Tape screens are displayed and discussed in logical sequence. This chapter focuses on familiarizing the user with the CONTROL-M/Tape user interface while introducing CONTROL-M/Tape concepts and terminology.

Chapter 3, "Rule Parameters"

Detailed information on (and examples for) each CONTROL-M/Tape Rule Definition parameter.

Rules can be created by specifying parameters using the Online facility. They can also be created using a standard editor.

Chapter 4, "Organization and Administration"

Detailed description of CONTROL-M/Tape components, and an in-depth description of CONTROL-M/Tape processing logic, which is discussed briefly in the introduction chapter.

Chapter A, "Editing Rule Definitions in the IOA Edit Environment"

Chapter B, "AutoEdit Variables"

Chapter C, "Status Codes in the Inquire/Update Screen"

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Conventions Used in This Guide

Notational conventions that may be used in this guide are explained below.

Standard Keyboard Keys

Keys that appear on the standard keyboard are identified in boldface, for example, **Enter**, **Shift**, **Ctrl+S** (a key combination), or **Ctrl S** (a key sequence).



WARNING

The commands, instructions, procedures, and syntax illustrated in this guide presume that the keyboards at your site are mapped in accordance with the EBCDIC character set. Certain special characters are referred to in this documentation, and you must ensure that your keyboard enables you to generate accurate EBCDIC hex codes. This is particularly true on keyboards that have been adapted to show local or national symbols. You should verify that

\$ is mapped to x'5B'

is mapped to x'7B'

@ is mapped to x'7C'

If you have any questions about whether your keyboard is properly mapped, contact your system administrator.

Preconfigured PFKeys

Many commands are preconfigured to specific keys or key combinations. This is particularly true with regard to numbered PF keys, or pairs of numbered PFKeys. For example, the END command is preconfigured to, and indicated as, **PF03/PF15**. To execute the END command, press either the **PF03** key or the **PF15** key.

Instructions to enter commands may include

- only the name of the command, such as, enter the END command
- only the PF keys, such as, press **PF03/PF15**
- or both, such as, press **PF03/PF15**, or enter the END command

Command Lines and Option Fields

Most screens contain a command line, which is primarily used to identify a single field where commands, or options, or both, are to be entered. These fields are usually designated COMMAND, but they are occasionally identified as COMMAND/OPT or COMMAND/OPTION.

Option field headings appear in many screens. These headings sometimes appear in the screen examples as OPTION, or OPT, or O.

Names of Commands, Fields, Files, Functions, Jobs, Libraries, Members, Missions, Options, Parameters, Reports, Subparameters, and Users

The names of commands, fields, functions, jobs, libraries, members, missions, options, parameters, reports, subparameters, users, and most files, are shown in standard UPPERCASE font.

User Entries

In situations where you are instructed to enter characters using the keyboard, the specific characters to be entered are shown in this **UPPERCASE BOLD** text, for example, type **EXITNAME**.

Syntax statements

In syntax, the following additional conventions apply:

- A vertical bar (|) separating items indicates that you must choose one item. In the following example, you would choose *a*, *b*, or *c*:

a | b | c

- An ellipsis (. . .) indicates that you can repeat the preceding item or items as many times as necessary.
- Square brackets ([]) around an item indicate that the item is optional. If square brackets ([]) are around a group of items, this indicates that the item is optional, and you may choose to implement any single item in the group. Square brackets can open ([) and close (]) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.
- Braces ({ }) around a group of items indicates that the item is mandatory, and you must choose to implement a single item in the group. Braces can open ({) and close (}) on the same line of text, or may begin on one line of text and end, with the choices being stacked, one or more lines later.

Screen Characters

All syntax, operating system terms, and literal examples are presented in this typeface. This includes JCL calls, code examples, control statements, and system messages. Examples of this are:

- calls, such as

```
CALL 'CBLTDLI'
```

- code examples, such as

```
FOR TABLE owner.name USE option, . . . ;
```

- control statements, such as

```
//PRDSYSIN DD * USERLOAD PRD(2) PRINT
```

- system messages, both stand-alone, such as You are not logged on to database `database_name`, and those embedded in text, such as the message You are not logged on to database `database_name`, are displayed on the screen.

Variables

Variables are identified with *italic* text. Examples of this are:

- In syntax or message text, such as
Specify database *database_name*
- In regular text, such as
replace database *database_name1* with database *database_name2* for the current session
- In a version number, such as
EXTENDED BUFFER MANAGER for IMS 4.1.xx

Special elements

This book includes special elements called *notes* and *warnings*:

NOTE



Notes provide additional information about the current subject.

WARNING



Warnings alert you to situations that can cause problems, such as loss of data, if you do not follow instructions carefully.

Information New to This Version

Where substantive additions and modifications to the content of this guide occur, revision bars have been inserted in the margin.

Additional information that is new to this version is described in Appendix C of the *INCONTROL Upgrade Guide*.

Related Publications

CONTROL-M/Tape Conversion Guide

Detailed instructions for how to convert tape management information from another tape management system into a format that can be used by CONTROL-M/Tape.

CONTROL-M/Tape Implementation Guide

A step-by-step guide to implementing CONTROL-M/Tape at your site.

INCONTROL for z/OS Administrator Guide

Information for system administrators about customizing and maintaining INCONTROL™ products.

INCONTROL for z/OS Installation Guide

A step-by-step guide to installing INCONTROL products using the INCONTROL™ Installation and Customization Engine (ICE) application.

INCONTROL for z/OS Messages Manual

A comprehensive listing and explanation of all IOA and INCONTROL messages and codes.

INCONTROL for z/OS Security Guide

A step-by-step guide to implementing security in INCONTROL products using the ICE application.

INCONTROL for z/OS Utilities Guide

This book describes utilities designed to perform specific administrative tasks that are available to INCONTROL products.

Introduction

This chapter includes the following topics:

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INCONTROL Products and IOA

The CONTROL-M/Tape tape management system is a component member of the INCONTROL by BMC Software family of products, a fully integrated suite designed to automate, manage and streamline operations on the z/OS mainframe. The INCONTROL family also includes client and server products that facilitate the automation of other platforms.

IOA

The Integrated Operations Architecture (IOA) is at the heart of the INCONTROL family of products. IOA has a common core of shared code as the foundation of its architecture design. INCONTROL's IOA environment has several inherent design advantages, including a common user interface and a shared data repository. A key feature of the IOA environment is its integrated application design, which includes:

- Integrated User Notification
- Management by Exception
- Integrated Scheduling
- Interdependency and Interrelationship Handling
- Common Help Facility
- Integrated Management Reporting
- Common Method for Sharing Information
- Unified Installation and Maintenance
- Unified Security Implementation
- Open Interface Design

INCONTROL

The INCONTROL family of products includes:

Table 1 List of INCONTROL Products

Product	Description
CONTROL-M	Automated Production Control and Scheduling System Manages and automates the setup, scheduling and execution of jobs in the data center.
CONTROL-M/Restart	Restart Management System Automates the activities that must be performed when restarting failed jobs, including the scratching and uncataloging of data sets created by failed jobs.
CONTROL-M/Tape	Removable Media Management System Increases utilization of removable media and controls retention periods. Prevents misuse of media, and provides tape library and vault control.
CONTROL-M/Analyzer	Automated Information Integrity System Performs in-stream validation, accuracy, and reasonability checks on information used by data center production tasks (for example, reports, databases).
CONTROL-D	Output Management System Automatically schedules and controls every aspect of report processing and distribution, including report decollating, bundling, printing, online viewing, and archiving.
CONTROL-V	Quick Access Archive Viewing System Provides online access to archived reports and documents by indexed data retrieval.
CONTROL-D/ Page On Demand	Report Retrieval and Display System Enables end users to retrieve and view pages of reports that reside on mainframe storage in real time. Indexed reports can be retrieved by index name and value. AFP and XEROX reports can also be retrieved and displayed using CONTROL-D/WebAccess Server or CONTROL-D/Page On Demand API.
CONTROL-D/ Image	Image Output Management System Enables output from commercial imaging equipment to be imported into either CONTROL-D or CONTROL-V for decollation, distribution and viewing, and into CONTROL-V for archiving and indexed retrieval.
CONTROL-O	Console Automation System and Desired State Monitoring System Monitors and automatically responds to messages, commands, and data set events, as well as various other system events. The CONTROL-O/COSMOS feature allows for status monitoring while maintaining all critical system objects in a desired and ideal status.

CONTROL-M/Tape: A Functional Approach

CONTROL-M/Tape is designed to efficiently track and control all types of removable media.

CONTROL-M/Tape

- verifies that appropriate volumes are mounted and used
- prevents the accidental erasure (scratch) of data stored on removable media
- tracks, controls, and manages the movement of removable media throughout its life cycle
- dynamically stacks files on removable media to increase media utilization
- stacks removable media files in batch mode to increase the use of the media with minimal interference in production
- provides immediate answers to online inquiries
- simulates and forecasts future media management processing, enabling you to increase efficiency
- interfaces with a variety of different robotic tape libraries, Virtual Tape Services (VTS), and on-site software products to fully automate tape management at your site
- interfaces with a variety of different External Data Manager (EDM) applications, such as DFHSM and DMS/OS

Working together, the CONTROL-M/Tape facilities and components automate tape management at your site and increase efficiency in tape usage. This chapter introduces these facilities and components from a functional perspective, beginning with the major components that comprise the heart of CONTROL-M/Tape, and concluding with the minor components that enhance the functionality of CONTROL-M/Tape.

Major Components

This section describes the major components essential to CONTROL-M/Tape.

CONTROL-M/Tape Rule Definitions

A CONTROL-M/Tape rule is a set of parameters that define actions to be performed when a data set that satisfies specified selection criteria is created in the CONTROL-M/Tape database. When such a data set is created, the rule is activated (that is, the actions specified in the rule are performed).

Each rule definition contains the following sections:

Table 2 Rule Definition Sections

Section	Description
General Parameters	General information about the rule (for example, rule name, and priority of the rule).
Selection Parameters	Criteria that describe the data sets whose access triggers the rule.
Action Parameters	Actions to be performed when the rule is triggered.
Basic Scheduling Parameters	Days or dates on which a CONTROL-M/Tape rule is eligible for triggering.

Each rule only needs to be defined once. Once defined, a rule definition is saved. It can be modified later as required, and the changes saved. For more information on defining rules, see [“Rule Definition Facility” on page 89](#).

Rule definitions are stored in members in partitioned data sets (libraries) as follows:

- Related rule definitions are generally stored together in a single member called a rule table.
- Multiple rule tables are stored together in partitioned data sets called rule libraries.
- Multiple rule libraries can be defined.

CONTROL-M/Tape Media Database

CONTROL-M/Tape enables you to manage media on both a volume and a data set level. All volume and data set information is stored in the Media Database, which is an IOA Access Method database, thereby making the Media Database the main CONTROL-M/Tape file. All media access is tracked in the Media Database.

As CONTROL-M/Tape rules are implemented, changes to media management attributes (for example, vault patterns and retention periods) are updated in the Media Database. Because the Media Database always contains the most up-to-date information for each data set or volume, it forms the basis for CONTROL-M/Tape operations.

- Volumes are identified by a volume serial number (VOLSER). Volume information includes:
 - All fields essential for effectively managing media utilization (for example, device type, and capacity used).
 - Fields describing media movement (for example, vault name, entry dates, and expiration date in each vault).
 - Statistical information (for example, last access dates, change dates, EXCP counts, and error counts).
- Data sets are identified by the data set name, the volume that contains the data set, and the sequence number of that data set on the volume. Data set information includes:
 - All fields essential for protecting data integrity (for example, expiration date).
 - Security related fields (for example, the creating job name, user ID, and job account).
 - Media utilization fields (for example, capacity, and number of times used).
 - Statistical information fields (for example, last read and last write).
 - Basic data management fields (for example, block count, block size, and record format).

Minor Components

This section describes the minor components that enhance CONTROL-M/Tape functionality.

New Day Processing: Automated Loading of Rules

CONTROL-M/Tape rules are normally loaded when CONTROL-M/Tape is brought up. A predefined list of rule tables is scanned for rules that should be activated for the current day or date. Rules whose day or date specifications (meaning, basic scheduling criteria) are satisfied are loaded into memory. To ensure that rules to be activated on a specific day are loaded for that day, it is highly recommended that you reload rules each day. Reloading of rules is performed automatically through the CONTROL-M/Tape New Day procedure.

The New Day procedure also performs other tasks that need to be performed each day. This series of maintenance and housekeeping tasks is performed once a day at a specific time (usually the start of the working day). CONTROL-M/Tape does the following through the New Day procedure:

- Reloads CONTROL-M/Tape rules
- Expires unneeded data sets and volumes
- Reassigns volumes to different vaults
- Backs up the Media Database
- Checks the integrity of the Media Database
- Accumulates statistical information on the data sets created yesterday

Other tasks can optionally be added to the New Day procedure. Implementation and modification of the New Day procedure are described in detail in the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Administrator Guide*.

Pool Allocation

Pools are logical groupings of media (volumes) at your site (for example, a pool can be defined for each department in your organization). Organization of media information by pool can be particularly useful for allocating and budgeting removable media by department.

When a department's job requests a scratch volume, CONTROL-M/Tape determines the appropriate pool for that job according to user specified criteria (in a rule definition). CONTROL-M/Tape then verifies that the mounted volume is from the correct pool.

For more information, see [“Pool Definition Screen” on page 47](#).

Vault Management

Vaults are locations where removable media volumes can be stored as an alternative to the Active library. The movement of media to and from vaults or Active library (MAINLIB) is managed by the Vault Management facility. Vaulting requirements are established when data sets are created based on user-specified instructions defined in rules. These vaulting instructions are called the vault pattern.

For example, a volume may move to Vault A, then to Vault B, and then return to the Active library. Different retention periods can be specified at each location. A volume is scratched only when it has finished its vault pattern (meaning, is returned to the Active library (MAINLIB)).

Vault management is performed by a utility. This utility, that runs on a daily basis, performs the following functions:

Table 3 Vault Management Utility Functions

Function	Description
Movement Between Locations	Checks all retention periods at all vault locations to determine that volumes need to be transferred to different locations.
Report Production	Produces a distribution report that lists all volumes that should be moved to a new location or assigned a new slot number.
Vault Pattern Recalculation	If requested, recalculate vault patterns, according to updated rules.

Retention Management

CONTROL-M/Tape Retention Management determines how long the information contained in a data set or on a volume should be retained, and when that information can be overwritten.

The retention period of a data set is determined when the data set is created, according to the information specified through rules. The retention period of a volume is determined by the latest retention period of its data sets. Therefore, a volume becomes scratch only when all its data sets have been scratched.

A data set can only become scratch according to its retention parameters. It can only be overwritten (recreated or modified) if it is physically the last active data set on the volume.

There are two types of retention:

Table 4 Data Set Retention Types

Retention	Description
Normal Retention	Established when the data set is closed properly.
Abend Retention	Applied if the data set is closed under abend, or not closed at all (for example, due to a system crash).

The actual expiration of data sets and volumes is performed by a utility. This utility, that runs on a daily basis, performs the following functions:

Table 5 Functions Performed by Retention Utility

Function	Description
Retention Processing	The retention specifications of all selected data sets are checked. Expired data sets are marked scratch in the Media Database. When all data sets on a volume are marked scratch, the volume becomes scratch.
Report Production	A report is produced that shows scratch volumes for a specific date. This report is an important tool for forecasting the availability of scratch volumes in each pool.
Retention Period Recalculation	If requested, the retention period of all or selected data sets and volumes is recalculated according to updated rules.

Dynamic Data Set Stacking

The Dynamic Data Set Stacking facility automates and manages the creation of multiple files on a physical volume, while remaining totally transparent to the user. CONTROL-M/Tape coordinates the entire administrative effort.

CONTROL-M/Tape implements dynamic stacking during real-time processing. Instead of creating a data set on a scratch volume, CONTROL-M/Tape can create the data set on a volume that already contains files but has enough free space. CONTROL-M/Tape uses volume information to calculate the free space remaining on the volume. The amount of space required to hold the data set is calculated based on how much space previous versions of the data set required. Job parameters are changed automatically to direct the data set to the appropriate volume.

Stacking is enabled or disabled depending on user specified rules. In addition, the desired percentage utilization of all media is specified.

CONTROL-M/Tape performs intelligent stacking by grouping data sets that have common characteristics (for example, similar expiration dates, same pool) on a single volume.

Report Generation

The following types of reports can be generated by CONTROL-M/Tape:

- Reports generated through the CTTRPT batch reporting facility with information produced from the Media Database.
- Reports generated through the CTTSTKR batch reporting facility with information from the Stacking database.
- CONTROL-M/Tape special purpose reports, that are generated automatically as a result of various maintenance operations (for example, retention management).
- Reports generated through the IOA KeyStroke Language.

Most CONTROL-M/Tape reports are produced from information in the Media Database and the Trace file. The reporting facility can be activated at any time, even if CONTROL-M/Tape is not active. For more information on reports generated by CONTROL-M/Tape, see utility CTTRPT in the INCONTROL for z/OS Utilities Guide.

Robotic Tape Library Interfaces

CONTROL-M/Tape can interact with the most popular robotic tape libraries (for example, StorageTek and IBM 3494/3495) to manage many tape management tasks at your site. The interface with the robots at your site allows CONTROL-M/Tape to ensure that the information in the robotic tape library's database is consistent with the CONTROL-M/Tape Media Database.

For more information, see the robotic tape library interface and virtual tape server discussion in the CONTROL-M/Tape Implementation Guide.

IOA Log Facility

Important messages issued by CONTROL-M/Tape are also written in the IOA Log file. The IOA Log file is a repository of messages issued by all INCONTROL products for z/OS. Through the IOA Log facility, the user can examine messages issued by CONTROL-M/Tape.

AutoEdit Facility

The AutoEdit facility enables inclusion of special user-defined variables and system variables in rule definitions. AutoEdit variables are generally specified in place of hard coded values that change frequently (for example, current date). The variables are resolved (meaning, replaced with the appropriate values) during rule processing. Use of AutoEdit variables can eliminate the need to edit and update rules once they have been defined.

The values of user-defined variables are stored in memory and can be used for triggering of rules, jobs, and missions in other INCONTROL products.

For added flexibility, various AutoEdit functions and control statements can be used to manipulate variables and constants in a rule definition.

For more information on the AutoEdit facility, refer to the *KeyStroke Language (KSL) User Guide*.

KeyStroke Language

The KeyStroke Language (KSL) is a general purpose language that simulates, in batch, keystrokes entered in the IOA Online facility. KSL language statements are specified in “programs” called scripts. KSL scripts can be used to automate routine tasks, and to generate reports based on IOA and product specific repository files. For more information on KeyStroke Language, refer to the *KeyStroke Language (KSL) User Guide*.

Interaction With Other INCONTROL Products

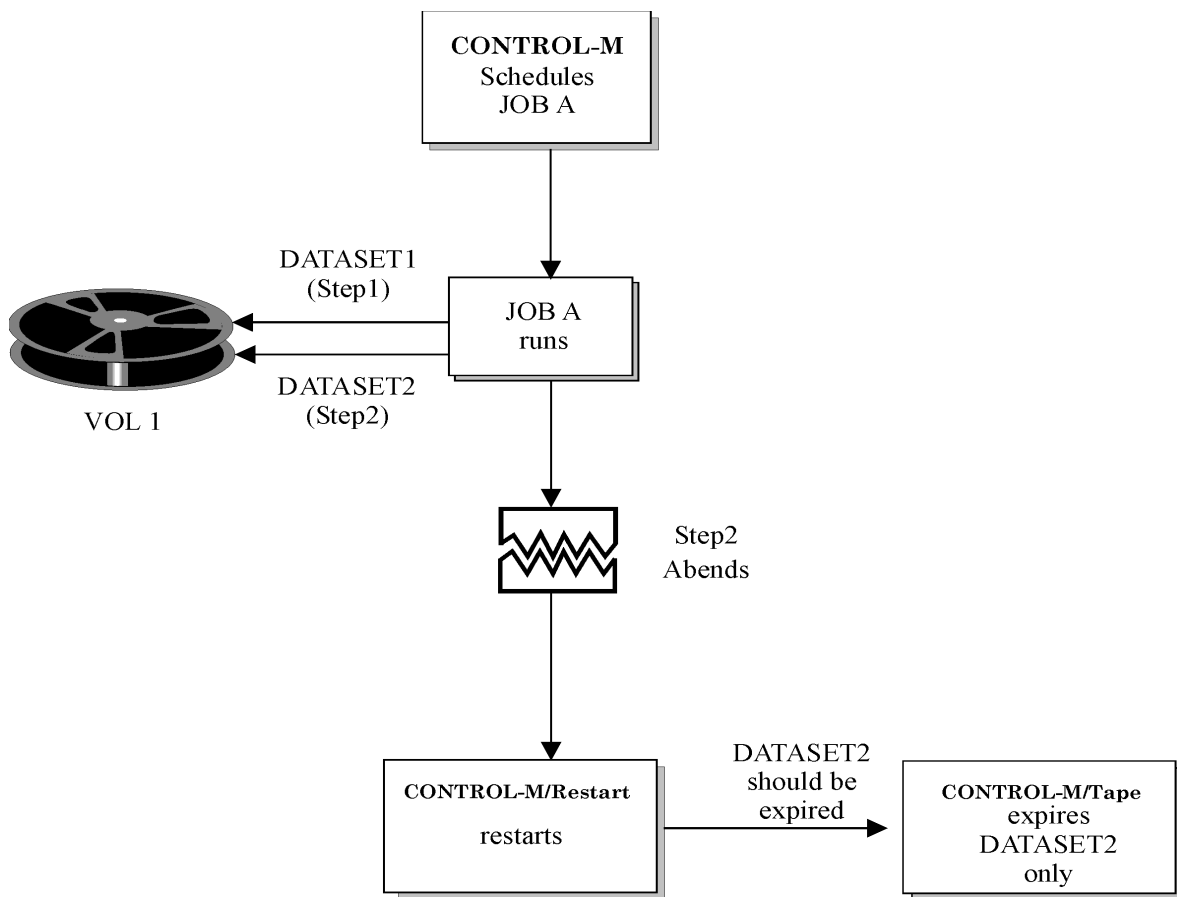
Since CONTROL-M/Tape is part of the INCONTROL family of products, CONTROL-M/Tape capabilities influence, and are influenced by, other INCONTROL products.

Prerequisite conditions automate the scheduling of events between INCONTROL products. The user can establish dependencies between media access and other events.

CONTROL-M/Tape can assign values to AutoEdit variables. AutoEdit variables can be saved in a member that can also be referenced by other INCONTROL products.

CONTROL-M/Tape media analysis can automatically trigger CONTROL-O rules, that can then perform CONTROL-O automation tasks. Media analysis can also affect the processes of other INCONTROL products.

CONTROL-M/Restart can automatically trigger the scratching of data sets in CONTROL-M/Tape as part of the restart process.

Figure 1 Interaction With Other INCONTROL Products

For example, the diagram above illustrates the following:

- A job, JOB A, creates two data sets on volume VOL 1. The first data set (DATASET1) is created in Step 1. The second data set (DATASET2) is created in Step 2.
- Step 2 of JOB A abends or ends NOT OK.
- CONTROL-M/Restart automatically restarts JOB A and notifies CONTROL-M/Tape that DATASET2 should be expired.
- CONTROL-M/Tape immediately expires DATASET2.

The integrated INCONTROL environment, and resultant synchronization between the products, provides extensive automated operations capabilities.

Operation Modes

CONTROL-M/Tape can be run in the following modes:

Table 6 Operation Modes

Mode	Description
Test mode	CONTROL-M/Tape works in parallel to other tape management systems at the site. Information is recorded in the Media Database, but CONTROL-M/Tape does not intervene in any way (for example, prompts are not issued, unexpired data sets are not protected, and mount messages are not modified). Default.
Phased mode	CONTROL-M/Tape works in parallel with other tape management systems at the site. Both products control and protect media at the site.
Production mode	CONTROL-M/Tape exclusively controls all tape management processing at the site (for example, unexpired data sets are protected, and mount messages are modified).

Mode can be specified globally for all CONTROL-M/Tape operations, or for specific rules. For more information, see parameter MODE in [Chapter 3, “Rule Parameters.”](#)

Utilities

Utilities provided with CONTROL-M/Tape are used to perform a variety of management functions and generate reports that assist in the efficient use of CONTROL-M/Tape. These utilities (and relevant IOA utilities) are described in the INCONTROL for z/OS Utilities Guide. INCONTROL for z/OS Online facilities are described in [Chapter 2, “Online Facilities.”](#)

Table 7 Trace Utilities

Utility	Description
CTTACP	Retrieves database tracking information.
CTTAFR	Formats and initializes the Trace file.
CTTCTRC	Allocates and formats the Trace file.
CTTRSM	Recovers tape activity from SMF records.
CTTTRB	Synchronizes the Trace file and the Media Database backup process.

Table 8 Stacking Utilities

Utility	Description
CTTGVL	Provides a user interface to the Stacking facility.
CTTSBD	Performs data set stacking in batch mode.
CTTSCA	Detects data set contentions.
CTTSTK	Builds and updates the Stacking Database.
CTTSTKR	Generates stacking statistics reports.

Table 9 Media Database Utilities

Utility	Description
CTTDLD	Adds non-scratch volumes, adds and deletes scratch volumes, and converts from other tape management systems.
CTTIDB	Checks the integrity of the Media Database.
CTTMER	Merges records from an extract file (created by utility CTTSP) into the Media Database.
CTTMUP	Performs manual update of the CONTROL-M/Tape repository.
CTTRCV	Recovers Media Database contents using the Trace file.
CTTRSM	Recovers Media Database contents using SMF records.
CTTSPL	Copies or moves (Splits) specified records from the Media Database.
CTTSYNC	Synchronize the Media Database with other software databases.

Table 10 Daily Management Utilities

Utility	Description
CTTRTM	Performs retention management.
CTTVTM	Performs vault management.

NOTE

As of version 6.1.00, all CONTROL-M/Tape databases use the IOA Access Method format. Certain utilities that handled the database files in previous versions were replaced by IOA utilities, as noted in [Table 11](#).

Table 11 Database Handling Utilities for IOA Access Method Databases (part 1 of 2)

Utility	Description
CTTBIX	Builds the index of the Media Database.
CTTDBIB	Builds the indexes of the Stacking Database.
IOADBF	Allocates and formats an IOA Access Method file. This utility replaces both the CTTDBF and CTTCRDF utilities as of version 6.1.00.

Table 11 Database Handling Utilities for IOA Access Method Databases (part 2 of 2)

Utility	Description
IOADIG	Verifies the integrity of an IOA Access Method file data component. This utility replaces the CTTDBID utility as of version 6.1.00.
IOADII	Verifies the integrity of an IOA Access Method file index component. This utility replaces the CTTDBII utility as of version 6.1.00.
IOADLD	Loads IOA Access Data components from a sequential data set. This utility replaces the CTTDBDL utility as of version 6.1.00.
IOADPT	Prints records, in dump format, from an IOA Access Method database to a SYSOUT. This utility replaces the CTTDBPRT utility as of version 6.1.00.
IOADUL	Unloads IOA Access Data components to a sequential data set. This utility replaces the CTTDBDUL utility as of version 6.1.00.

Table 12 Miscellaneous CONTROL-M/Tape Utilities

Utility	Description
CTTRPT	Generates reports and from extracted Media Database information.
CTTTPI	Initializes tapes, erases tapes, and produces a detailed report of the logical and physical contents of a volume.

Operator Notification (the Shout Facility)

CONTROL-M/Tape can send messages to specified locations in response to detected access of specified data sets. For each Shout message to be sent, the user defines the message, the degree of urgency, and the location to which the message should be sent.

For more information about the Shout facility, see DO SHOUT in [Chapter 3, “Rule Parameters.”](#)

Rule Scheduling using the Calendars: IOA Calendar Facility

Specification of scheduling criteria for rules can be simplified by calendar definitions. A calendar definition consists of a defined schedule (for example, Mondays through Fridays in each week in each month) that can be applied to rules.

Calendars are defined in the IOA Calendar facility. Each calendar is assigned a unique name, that can be specified in rule definitions. A particular calendar (meaning, schedule) only needs to be defined once.

Specification of the name of a calendar in rule definitions causes that calendar schedule to be used to schedule those rules.

Two types of calendars can be defined: Regular and Periodic.

Regular calendars contain schedules that can be easily defined using Basic Scheduling parameters. These calendars consist of scheduling date or days (of the week) that can be fixed according to monthly patterns.

Example 1

WEEKDAYS	Calendar schedules rules each Monday through Friday in each month.
WEEKENDS	Calendar schedules rules each Saturday and Sunday in each month.
QUARTERLY	Calendar schedules rules on the last day of each quarter: March 31, June 30, Sept. 30, Dec. 31.

Regular calendars are useful when many rules have the same schedule. The schedule can be defined once in a calendar and the calendar can be specified in relevant rules to individually define that schedule in each rule definition

Periodic calendars are useful in situations where basic scheduling criteria would be difficult to define because they do not easily conform to fixed day or date of the week or month formatting.

Example 2

PAYCAL	Schedules missions (for example, payroll) every other Wednesday. Scheduling occurs on the first, third, and (if there is one) fifth Wednesday of some months. Scheduling occurs on the second and fourth Wednesday of other months.
--------	---

The IOA Calendar facility is accessed by option 8 of the IOA Primary menu. It is described in [Chapter 2, “Online Facilities.”](#)

Online User Interface

CONTROL-M/Tape provides an online user interface that enables the user to:

- Interface with most of the previously described facilities.
- Immediately access up-to-date information on media management.
- Intervene in the processes of media management.

The Online user interface is provided through online facilities that are accessed by the IOA Primary Option menu.

Certain online facilities are unique to CONTROL-M/Tape, and other facilities are shared by many or all INCONTROL for z/OS products.

All INCONTROL and CONTROL-M/Tape online facilities are described in detail in [Chapter 2, “Online Facilities.”](#) They are all outlined briefly on the following pages.



NOTE

Your INCONTROL administrator can limit the options displayed on a user-by-user basis and can alter option numbers and customize option descriptions. Product supplied default options are discussed in this overview.

Rule Definition Facility

The CONTROL-M/Tape Rule Definition facility is accessed through option TR of the IOA Primary Option menu. It is the main online facility for creating, defining, modifying, and deleting:

- Rule libraries
- Rule tables
- Rule definitions

This facility can also be used to edit an existing rule definition.

Pool Definition Screen

The Pool Definition screen is accessed through option TP of the Primary Option menu. This screen is used to view create and modify pool definitions.

Pools are defined according to logical categories that exist at your location (for example, a pool can be defined for each department in your organization). This method is particularly useful for allocating and budgeting removable media by department.

A certain number of scratch volumes should be allocated for each pool. Pools are defined to CONTROL-M/Tape through the Pool Definition screen. Pool definitions are stored in tables (members) that are stored in definition libraries.

When a department's job requests a scratch volume, CONTROL-M/Tape determines the appropriate pool for that job according to rule specifications. CONTROL-M/Tape then ensures that the mounted volume is from the correct pool.



NOTE

Once a pool is defined, only data sets associated with that pool can use volumes from that pool.

Vault Definition Screen

The Vault Definition screen is accessed by option TV of the IOA Primary Option menu. This screen can be used to view, modify and create vault definitions.

A vault is a media storage location (usually, but not necessarily, off-site) for inactive volumes (for example, backup volumes). A vault definition defines the vault name, location, and optionally, the capacity of the vault.

Off-site vaults are called Remote vaults. Vaults at the same location as the active library are called Local vaults.

The smallest unit that can be transferred to a vault is a volume. Volumes can be transferred from vault to vault, or back to the active library, based on vault patterns.

Vault patterns dictate the movement of volumes between storage locations, based on retention periods specified (in rule definitions) for each location. A vault pattern that is defined in a rule can specify an unlimited number of vaults.

Distribution reports, pick lists, and inventory reports can be printed for each vault.

Vaults are defined to CONTROL-M/Tape using the Vault Definition screen. Vault definitions are stored in tables (members) that are stored in definition libraries.

Inquire and Update of the Media Database

The Media Database list is accessed using option TI of the IOA Primary Option menu. This screen displays a list of selected data sets and volumes in the Media Database. The data sets and volumes to be displayed are selected using the Inquiry Update entry panel.

In this screen you can:

- Request additional information for any volume or data set.
- List all data sets on a given volume, or all volumes where a specific data set resides.
- List all volumes of a multi-volume chain to which a specific volume belongs.
- Update displayed information.
- Expire a volume or data set.
- Extend the expiration date of a volume or data set.
- Check out a volume.
- Reenter a volume that was checked out.
- Recall a volume from a vault.
- Send a volume to a vault.
- Indicate that a volume was cleaned.
- Print labels.
- Delete or undelete a volume.

External Volume Check-In Screen

The External Volume Check-In screen is accessed through option TC of the IOA Primary Option menu. This screen is used for the definition and addition of external volumes (for example, volumes sent from other sites) to CONTROL-M/Tape.

When this screen is entered, previously saved data on external volumes is displayed on the screen (by default).

For more information, see the section [“External Volume Check-In Facility” on page 207](#)

IOA Conditions/Resources Screen

The IOA Conditions/Resources screen is accessed through option 4 of the IOA Primary Option menu. It displays information from the IOA Conditions file, that contains the list of all existing prerequisite conditions, and the CONTROL-M/Tape Resources file, that contains the list of Quantitative resources and Control resources. The IOA Conditions/Resources screen enables the user to:

- View IOA prerequisite conditions.
- View CONTROL-M/Tape Quantitative resources.
- Add or delete prerequisite conditions and/or resources.
- Change the available quantity of Quantitative resources.

IOA Log Screen

IOA messages are written to the IOA Log file. Messages can be viewed through option 5 in the IOA Primary Option menu. These messages record every significant event in the life of a job, started task, mission, rule, and so on under the control of INCONTROL products. This includes messages generated for normal processing occurrences and error conditions (if any) encountered during processing. The IOA Log also contains messages directed to the IOA log from the Shout facility.

The IOA Log file stores a limited number of messages (specified by an installation parameter). Each new entry in the IOA Log file overwrites the oldest existing entry.

The user can filter IOA Log file contents displayed in the IOA Log screen by a filter window that allows specification of viewing criteria for each field in the IOA Log screen.

CONTROL-M/Tape Concepts

The following CONTROL-M/Tape concepts are discussed below:

- CONTROL-M/Tape Repository and the IOA Core
- SL-NAME Concept
- Active Library

CONTROL-M/Tape Repository and the IOA Core

A differentiation is made between files belonging to a particular product such as CONTROL-M/Tape, and files that are shared among INCONTROL products.

Files belonging to a particular product are located in the repository for that product. The CONTROL-M/Tape repository consists of the following files:

Table 13 CONTROL-M/Tape Repository Files (part 1 of 2)

File	Description
Rule Tables	Files containing CONTROL-M/Tape rule definitions
Media Database	All information about volumes and data sets managed by CONTROL-M/Tape. As of version 6.1.00, this database is in IOA Access Method format. For more information, see “CONTROL-M/Tape Media Database” on page 36 .

Table 13 CONTROL-M/Tape Repository Files (part 2 of 2)

File	Description
Trace File	<p>A record of all important activities in the CONTROL-M/Tape environment. The Trace file is the key vehicle for recovery, and for production of reports on CONTROL-M/Tape activity.</p> <p>Types of records found in the Trace file include:</p> <ul style="list-style-type: none"> ■ Before and after images of changes to volume and data set records. ■ Media Database and Trace file backups. <p>IOA Functional monitor requests.</p>
Stacking Database	<p>Statistical information on each data set, which enables CONTROL-M/Tape to estimate the amount of space required for the data set. Information about each previous generation of a data set is used to calculate the space required to store each data set. As of version 6.1.00, this database is in IOA Access Method format.</p> <p>Prior to version 5.1.4, this database was called the Stacking Statistics database.</p>

Shared INCONTROL files are collectively referred to as the IOA Core. The IOA Core consists of the following files:

Table 14 IOA Core Files

File	Description
IOA Log File	File in which all messages issued by INCONTROL products are recorded.
IOA Conditions File	File that lists the available conditions identified and tracked by the IOA Functional monitor (described below).
IOA Manual Conditions File	File listing prerequisite conditions that must be added manually (meaning, prerequisite conditions required by CONTROL-M jobs or CONTROL-D missions and that are not automatically added by other jobs or missions in the Active Jobs and Missions files).
IOA Calendar Tables	Files containing IOA calendar definitions.
Dynamic Destination Table	File containing a list of destinations for messages issued by the IOA Shout facility.

SL-NAME Concept

When checking in external volumes, the volser of a volume being checked may be identical to the volser of a volume already in the Media Database. This creates a problem because the volser must be a unique identifier of a volume in the Media Database.

To solve this problem, CONTROL-M/Tape stores volume identification information in the following way:

1. When a volume is checked in, the user assigns a new unique volser to the volume. The new unique volser is recorded in the VOLSER field of the volume record in the Media Database.
2. The original volser value (that matches the Standard Label of the volume) is recorded in the SL-NAME field in the volume record in the Media Database.
3. From this point on, whenever this checked-in volume is accessed, the new volser is used to identify the volume (including MVS Catalog if cataloged, JCL references to the volume, and so on).

For more information, see [“SL-NAME Concept” on page 412](#).

Active Library

The Active library (called MAINLIB) is the on-site media storage location for volumes. The smallest unit in the Active library is the data set. Each data set has an expiration date associated with it.

Data sets are stored on removable media volumes in the Active library. If space exists, several data sets can be stored on one volume. When necessary, one data set can span several volumes.

Data set records are created and expired in the Active library. During the lifetime of a data set, the volumes on which it is stored may be transferred to various vaults.

Several methods exist for adding volumes to the CONTROL-M/Tape Active library:

- performing a conversion of existing data when first implementing CONTROL-M/Tape at your site

For more information, see the INCONTROL for z/OS Installation Guide.

- manually defining new volumes using the CTTDL utility, described in the INCONTROL for z/OS Utilities Guide
- setting CONTROL-M/Tape to add volumes dynamically upon volume access (Automatic Check-In)
- using the [“External Volume Check-In Facility” on page 207](#)

Date Definition Concepts

The following of date definitions concepts are discussed below:

- System Date
- Working Date
- Date Standards and Date Field Formats
- Prerequisite Conditions
- Prerequisite Condition Dates

System Date

Date as supplied by the operating system. This date should reflect the actual calendar date starting and ending at midnight.

Working Date

Many sites do not use midnight as the formal time for changing to a new date. A site, for example, may determine that all processing performed between the hours of midnight and 6:00 a.m. belongs to the previous day's processing. In this case, the installation working date at the site changes at 6:00 a.m., not at midnight.

The working date (meaning, the time at which the date changes at the site) is defined in the CONTROL-M/Tape installation parameters. The New Day procedure is generally triggered at the beginning of the working day.

Date Standards and Date Field Formats

Date standards and date field formats use either Gregorian or Julian dates.

Gregorian Dates

Gregorian dates are indicated in the guide by the following symbols:

Table 15 **Gregorian Date Symbols**

Symbol	Description
dd	Day of the month (01 – 31)
mm	Month (01 – 12)
yy	Last two digits of the year Note: If the last two digits in the specified year are a number less than 56, IOA presumes that the year is in the 21 st century (for example, if yy=15, the year 2015 would be presumed). Otherwise, IOA presumes that the year is in the 20 th century (for example, if yy=80, the year 1980 would be presumed).
yyyy	Four digits of the year

Whether a field holds a 4-character date (month and day), a 6-character date (month, day and 2-digit year) or an 8-character date (month, day and 4-digit year) depends on the field. However, the format of the 4-character, 6-character or 8-character date depends on the installation defined date standard.

INCONTROL products support three date standards for Gregorian dates. Each standard has an 8-character format, a 6-character format and a 4-character format. Only one Gregorian date standard is defined at any site.

These supported Gregorian date standards are described in the chart below.

Table 16 **Standard Gregorian Dates**

Standard	4-Character Date	6-Character Date	8-Character Date
MDY	mmdd	mmddyy	mmddyyyy
DMY	ddmm	ddmmyy	ddmmyyyy
YMD	mmdd	yymmdd	yyyymmdd

Julian Dates

Julian dates are indicated in the guide by the following symbols:

Table 17 **Julian Date Symbols**

Symbol	Description
jjj or ddd	Day of the year (001 – 365 or 366, as appropriate for the year)
yy	Last two digits of the year
yyyy	Four digits of the year

Julian date fields have either three, five, or seven characters. Whether a Julian date field holds a 3-character date (day of year only), 5-character date (day of year and 2-digit year) or a 7-character date (day of year and 4-digit year) depends on the field definition. However, the format of the date depends on the installation defined date standard.

For example, the Julian date for the calendar date of 28 February 2000 would be represented in `jjj` or `ddd` format as 059, in `yyjjj` or `yyddd` format as 00059, and in `yyyyjjj` or `yyyyddd` format as 2000059.

Prerequisite Conditions

A prerequisite condition is a user-defined descriptive name given to a certain situation or condition. Prerequisite conditions can be specified in a CONTROL-M/Tape rule definition using a DO CONDITION statement.

Prerequisite conditions can serve as a method of communication between CONTROL-M/Tape and the other INCONTROL products at your site.

CONTROL-M/Tape uses prerequisite conditions to track the status of various aspects of the environment. When the status of a specific aspect of the environment changes, a CONTROL-M/Tape rule can set or delete a condition to indicate this, and then subsequently trigger jobs, rules, or missions in other INCONTROL products whose execution is dependent on the status of this condition.

Prerequisite Condition Dates

DO CONDITION statements each provide a field used to specify a date for each prerequisite condition. A DO CONDITION prerequisite condition that is added with a particular date cannot satisfy a statement in a job, rule, or mission of another INCONTROL product in that this prerequisite condition is specified with a different date.

Online Facilities

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Overview

The Online facility is the basic means of communication between the user and CONTROL-M/Tape.

Online definition facilities allow you to view the status of all parameters relating to a specific rule, pool, or vault definition, or a group of rules, pools or vault definitions.

The Inquiry/Update screen allows authorized users to view and modify information concerning all media managed by CONTROL-M/Tape.

The following pages describe the main features available under the Online facility.

IOA Features

This section discusses the IOA features common to all INCONTROL products.

General IOA Features

General IOA features include:

- Customization
- Environment Support
- Terminal Support
- Special Character Usage on Terminals
- Color Support
- Prefixing
- Character Masking

Customization

IOA screens, constants, messages, colors, commands, and PFKey definitions can be site-modified to adapt them to local needs.

INCONTROL products can be customized globally, that is, for the whole site, using the INCONTROL Installation and Customization Engine (ICE), according to profile variables defined during installation.

In addition, INCONTROL products can be customized to respond differently to individual users if these profile variables are specified in user profile members.

For example, depending on the setting of a variable in a particular user profile member, upon exit from a screen in which changes have been requested, this INCONTROL product may either perform the requested changes automatically or display a confirmation window before performing the changes.

Customization issues are discussed in the *INCONTROL for z/OS Installation Guide*.



NOTE

Due to customization, the screens and examples illustrated in this guide may differ from the ones used at your site.

Environment Support

The Online facility can be activated under the following environments:

- TSO (native)
- TSO/ISPF
- ROSCOE/ETSO
- CICS
- VTAM
- IMS/DC
- IDMS/DC
- COM-LETE

Cross memory interfaces (to the Online monitor) are optional under native TSO, TSO/ISPF, and ROSCOE/ETSO. They are always used under the other environments.

There are slight differences in the operation of the Online facility under the different environments. Special notes are provided in this guide where applicable.

Terminal Support

IOA supports the following models of IBM 3270 terminals:

- Model 2 – 24 lines, 80 columns
- Model 4 – 43 lines, 80 columns
- Model 3 – 32 lines, 80 columns
- Model 5 – 27 lines, 132 columns



NOTE

When using the IOA online facility under IMS/DC and IDMS/DC, all model types display 24 lines and 80 columns.

IOA adjusts to the screen size in order to use the maximum available data area on the screen.

Special Character Usage on Terminals

In certain cases, special keyboard characters, such as \$, #, and @, are assigned special meanings. The characters specified appear on standard American terminals but may not be available on other keyboards. In addition, some special characters on your keyboard may be assigned different hexadecimal values than the ones recognized by IOA. Special keyboard mapping requirements, and a complete discussion of the conventions used in this guide, are shown in [“Conventions Used in This Guide” on page 25](#).

Color Support

When INCONTROL products are activated from a screen with extended seven-color support, they make extensive use of the color attributes of the screen. The concept of management by color is emphasized in INCONTROL screens.

Like all screen attributes, the color attribute for each field is defined externally to the program and can be locally modified by the site.



NOTE

IOA does not automatically recognize IMS/DC and IDMS/DC terminals as supporting extended color attributes. If your IMS/DC or IDMS/DC terminal supports extended color attributes and you want IOA to recognize this, refer to the *INCONTROL for z/OS Administrator Guide* for more information.

At this time, IOA does not support extended color attributes under COM-LETE.

Due to ISPF characteristics, color changes cannot occur in adjacent columns but must be separated by an attribute byte without color, that is, black. Therefore, some IOA screens have a different appearance under ISPF than under other online environments, such as native TSO and CICS.

Prefixing

For fields that automatically support prefixing, selection strings are always treated as prefixes. Selection is made if a segment of the text beginning with the first letter, that is, any prefix, matches the selection criterion.

Examples

Assume the following names exist: A3, A4, M, M01, M03, M12, M13, M22, M23, M30, M33, M103, M135, M301.

Table 18 Prefixing Examples

Entry	Matching Value
blank	All of the above values
A	A3, A4
M	M, M01, M03, M12, M13, M22, M23, M30, M33, M103, M135, M301
M1	M12, M13, M103, M135
M13	M13, M135

If a field supports prefixing, this fact is indicated in its description.

Character Masking

For fields that support masking, mask characters function as follows:

- * represents any number of characters, including no characters
- ? represents any one character

For fields that do not automatically support prefixing, a prefix value can be specified by ending the selection string with an asterisk.

Examples

Assume the following names exist: A3, M, M3, M01, M03, M13, M23, M33, M103, M435, M2243.

Table 19 Masking Examples

Entry	Matching values
*	All the above values
M?3	M03, M13, M23, M33
M?3*	M03, M13, M23, M33, M435
M???3	M103
M*3	M3, M03, M13, M23, M33, M103, M2243
M*	M, M3, M01, M03, M13, M23, M33, M103, M435, M2243
	Since the last character in this example is *, M is treated as a prefix.

If a field supports masking, this fact is indicated in its description.

IOA Entry Panel

Enter the IOA Online facility according to the instructions of your INCONTROL administrator. Upon entering the IOA Online facility, the IOA entry panel may be displayed.



NOTE

Display of the IOA Entry Panel is optional. If your INCONTROL administrator determined that the entry panel is bypassed, the IOA Primary Option menu, which is discussed in the following section, is displayed.

Figure 2 IOA Entry Panel

```

----- IOA ENTRY PANEL -----
+-----+
|                                     |
|   USER ID   ===>                   |
|   PASSWORD  ===>                   |
| NEW PASSWORD ===>         ===>     |
|                                     |
+-----+
PLEASE FILL IN USER ID AND PASSWORD AND PRESS ENTER 18.30.18
  
```

Type your user ID and password and press **Enter**. If you enter a correct user ID and password, the IOA Primary Option menu is displayed.

The IOA Online facility allows three attempts to enter a valid user ID and password combination. After the third unsuccessful attempt, the program is terminated.

To change a password, type the new password twice: Once in the NEW PASSWORD field and once in the confirmation field.

IOA Primary Option Menu

The IOA Primary Option menu is the primary interface to functions available under the various INCONTROL products. The options displayed in the menu depend on the INCONTROL products installed at the site, and the functions and facilities that have been authorized to you.

If only CONTROL-M/Tape is active at your site, and you are authorized to access all functions and facilities, the following screen is displayed:

NOTE



When the Online facility is activated as an ISPF application, option 6 is displayed as: “6 UTILITIES Online Utilities.” In this case, option 6 activates the Online Utilities under ISPF. When the Online facility is not activated under TSO or TSO/ISPF, option 6 is inactive.

Figure 3 IOA Primary Option Menu when Only CONTROL-M/Tape is Installed

-----		IOA PRIMARY OPTION MENU		----- (1)	
OPTION ==>				USER	N22A
				DATE	19.08.01
4	COND-RES	IOA Conditions/Resources Display			
5	LOG	IOA Log Display			
6	TSO	Enter TSO Command			
7	MANUAL COND	IOA Manual Conditions Display			
8	CALENDAR DEF	IOA Calendar Definition			
IV	VARIABLE DATABASE	IOA Variable Database Definition Facility			
TR	RULE DEFINITION	CTT Rule Definition			
TP	POOL DEFINITION	CTT Pool Definition			
TV	VAULT DEFINITION	CTT Vault Definition			
TI	INQ/UPD MEDIA DB	CTT Media Database Inquire/Update			
TC	CHECK IN EXT VOL	CTT External Volume Check-In			
COMMANDS: X - EXIT, HELP, INFO OR CHOOSE A MENU OPTION					18.05.34

To select an option, type the option number or letters in the OPTION field and press **Enter**. Alternatively, for a number option, press the PFKey of the same number. For example, to select the LOG option, press **PF05/PF17**.

NOTE



Your INCONTROL administrator can limit the options displayed on a user-by-user basis and can alter option numbers and customize option descriptions. Product supplied options are discussed in this guide.

Certain IOA commands, functions, and facilities (options) are shared by all INCONTROL products. These shared IOA commands, functions and facilities are described later in this chapter, and outlined in [Table 20](#).

Table 20 INCONTROL Shared IOA Functions and Facilities

Option	Function	Description
4	COND/RES	Display and update the status of the IOA Conditions file and the CONTROL-M Resources file.
5	LOG	View audit trail information about jobs, missions, and rules scheduled under the supervision of INCONTROL products.
6	TSO ^a	Perform TSO commands.
7	MANUAL COND	Display the list of prerequisite conditions that must be confirmed manually by operations personnel.
8	CALENDAR DEF	Define scheduling calendars.
X	EXIT	Exit the Online facility.
INFO	INFO	Display a window in the IOA Primary Option Menu. The window contains information about installed INCONTROL products. For more details on the information displayed by this command, see “IOA Version Information” on page 68 .

^a When the Online facility is activated as an ISPF application, option 6 is displayed as “6 UTILITIES Online Utilities.” In this case, option 6 activates the Online utilities under ISPF. When the Online facility is not activated under TSO or TSO/ISPF, option 6 is inactive.

NOTE



Entering =1 in the command line of any other screen returns you to the IOA Primary Option Menu that is displayed at your site.

These shared functions and facilities are described in further detail in this chapter.

The following functions (options) are applicable to CONTROL-M/Tape:

Table 21 CONTROL-M/Tape Functions and Facilities

Option	Function	Description
TR	RULE DEFINITION	Rule Definition.
TP	POOL DEFINITION	Pool Definition.
TV	VAULT DEFINITION	Vault Definition.
TI	INQ/UPD MEDIA DB	Inquire/Update screen.
TC	CHECK IN EXT VOL	Check In External Volume.

The following IOA Primary Option Menu is displayed at sites supporting all currently available INCONTROL products (under ISPF).

NOTE



When the IOA online facility is activated as an ISPF application, option 6 is displayed as “6 UTILITIES Online Utilities.” In this case, option 6 activates the Online utilities under ISPF. When the online facility is not activated under TSO or TSO/ISPF, option 6 is inactive.

Figure 4 IOA Primary Option Menu when all INCONTROL Products are Installed

IOA PRIMARY OPTION MENU			(1)	
OPTION ==>			USER	N06
IOA	CONTROL-D/V	CONTROL-O		
4 COND-RES	A MISSION STATUS	OR	RULE DEFINITION	
5 LOG	M MISSION DEF	OM	MSG STATISTICS	
6 TSO	R REPORT DEF	OS	RULE STATUS	
7 MANUAL COND	T RECIPIENT TREE	OL	AUTOMATION LOG	
8 CALENDAR DEF	U USER REPORTS	OA	AUTOMATION OPTS	
IV VARIABLE DATABASE	F PC PACKET STATUS	OC	COSMOS STATUS	
	DO OBJECTS	OK	KOA RECORDER	
CONTROL-M & CTM/Restart		CONTROL-M/Analyzer	CONTROL-M/Tape	
2 JOB SCHEDULE DEF	BB BALANCING STATUS	TR	RULE DEFINITION	
3 ACTIVE ENV.	BM MISSION DEF	TP	POOL DEFINITION	
C CMEM DEFINITION	BV DB VARIABLE DEF	TV	VAULT DEFINITION	
	BR RULE DEFINITION	TI	INQ/UPD MEDIA DB	
	BA RULE ACTIVITY	TC	CHECK IN EXT VOL	
COMMANDS: X - EXIT, HELP, INFO OR CHOOSE A MENU OPTION			16.20.21	

NOTE



Entering =1 in the command line of any other screen returns you to the IOA Primary Option Menu that is displayed at your site.

For a description of the options for other INCONTROL products, see the user guides of the respective products.

Additional options available on the IOA Primary Option menu when operating CONTROL-M/Tape with other INCONTROL products are listed below:

Table 22 IOA Primary Option Menu Options (part 1 of 2)

Option	Name	Description
IV	VARIABLE DATABASE	Define, display and update IOA Database variables used by CONTROL-O and CONTROL-M.
Note: Option IV is available only at sites where CONTROL-O or CMEM are installed.		
2	JOB SCHEDULE DEF	Define or modify job production parameters.
3	JOB STATUS	Display and update status of jobs scheduled under CONTROL-M.
C	CMEM DEFINITION	Define or modify CMEM rules.
Note: Options 2, 3, and C are available only at sites where CONTROL-M is installed.		
A	MISSION STATUS	Display and update active missions status.
M	MISSION DEF	Define migration, printing, backup, and restore missions.
R	REPORT DEF	Define decollating missions (including indexing).
T	RECIPIENT TREE	Display and update the Recipient Tree.
U	USER REPORTS	Display and update the status of user reports. View reports online.
F	PC PACKET STATUS	Display the status of reports (packets) scheduled for transfer from the mainframe to a PC.
DO	OBJECTS	Manage CONTROL-D objects.
Note: Options A, M, R, T, U, F, and DO are available only at sites where CONTROL-D or CONTROL-V are installed.		
BB	BALANCING STATUS	Display and update the status of active balancing missions.
BM	MISSION DEF	Define balancing missions.
BV	DB VARIABLE DEF	Define, display and update Database variables.
BR	RULE DEFINITION	Define balancing rules.
BA	RULE ACTIVITY	Display rule activity and the result of invoking CONTROL-M/Analyzer rules.
Note: Options BB, BM, BV, BR, and BA are available only at sites where CONTROL-M/Analyzer is installed.		
OR	RULE DEFINITION	Define rules.
OM	MSG STATISTICS	View message statistics.
OS	RULE STATUS	View Rule Status screen.
OL	AUTOMATION LOG	Display commands, messages and/or traces.
OA	AUTOMATION OPTS	Display available operator productivity tools.

Table 22 IOA Primary Option Menu Options (part 2 of 2)

Option	Name	Description
OC	COSMOS STATUS	Display or modify the status of COSMOS-controlled objects and databases.
OK	KOA RECORDER	Record VTAM scripts
Note: Options OR, OM, OS, OL, OA, OV, OC, and OK are available only at sites where CONTROL-O is installed.		

IOA Version Information

Enter **INFO** (or **I**) in the **OPTION** field of the IOA Primary Option menu to display the IOA Version Information window, as illustrated in [Figure 5](#). This window lists the version and level of each INCONTROL product installed at the site, plus the CPU ID and current system date. The IOA Version Information window also identifies the unique IOA QNAME assigned to the site. For further information about the IOA QNAME, see the IOA operational parameters step, the IOAPLEX parameters step, and the adding IOA structures to the CFRM step, all in the *INCONTROL for z/OS Installation Guide*. Press **Enter** or **END (PF03/PF15)** to exit the window and return to the IOA Primary Option menu.

Figure 5 IOA Version Information

```

-----
IOA PRIMARY OPTION MENU                                     (1)
OPTION ==>                                                USER          N06

IOA                CONTROL-D/V                CONTROL-O

+-----+-----+-----+
 4 COND-RES | IOA VERSION INFORMATION | EFinition
 5 LOG      |                          | ATISTICS
 6 TSO      | IOA                      | TATUS
 7 MANUAL CON | IOAGATE                  | TION LOG
 8 CALENDAR D | CONTROL-M                      | TION OPTS
IV VARIABLE D | CONTROL-M/RESTART              | STATUS
              | CONTROL-M/ANALYZER  | CORDER
              | CONTROL-M/TAPE        |
              | CONTROL-D            |
CONTROL-M & CTM | CONTROL-V                      | ape
              | CONTROL-O          |
              | Version 6.1.00      |
              | Version 6.1.00      |
              | Version 6.1.00      |
              | Version 6.1.00      |
              | Version 6.1.00      |
              | Version 6.1.00      |
 2 JOB SCHEDU |                          | EFinition
 3 ACTIVE ENV |                          | EFinition
 C CMEM DEFIN | DATE 19.08.01 CPUID 02078D 7060 | DEFINITION
              | IOA QNAME IOAR610      | D MEDIA DB
              |                          | IN EXT VOL
+-----+-----+-----+

COMMANDS:  X - EXIT, HELP, INFO  OR CHOOSE A MENU OPTION          17.00.29

```

Multi-Screen Control

It is not necessary to return to the IOA Primary Option menu to move from one online facility to another.

To speed up transfer of control between screens of different facilities and to enable you to manage several online facilities at the same time, transfer control commands can be specified. Transfer commands take you directly from your current screen to the requested screen. Transfer commands can be used to reach any screen that can be accessed by the IOA Primary Option menu at your site.

Each transfer control command consists of an equal sign immediately followed by one of the options of the IOA Primary Option menu, which represents the target screen of the transfer. For example, from any screen, enter:

Table 23 IOA Transfer Control Commands

Command	Description
=5	to access the IOA Log screen
=4	to access the IOA Conditions/Resources screen
=1	to access the IOA Primary Option menu

If you use a transfer command to reach another screen, the state of the current screen remains unchanged when you return to it by another transfer command.

The INCONTROL administrator can globally deactivate any or all of the transfer commands.

Fast Exit from the IOA Online Facility

To exit immediately from the IOA Online facility, type =X on the command line and press **Enter**.

In most cases, the =X command has the same effect as pressing END (**PF03/PF15**) in all open screens and then entering X (Exit) in the IOA Primary Option menu. Any window, such as the Exit Option window, that would be displayed when exiting an open screen is displayed when the =X command is entered.

However, when the =X command is entered while definition screens such as the Calendar Definition screen are open, changes to the open definition screens are cancelled. Changes currently in definition facility list screens, for example, changes to previously closed definition screens, are not cancelled. Those screens and all other open screens are treated as if END (**PF03/PF15**) has been entered.

**NOTE**

The =X command is intentionally not supported on certain screens.

Screen Layout

Most IOA screens are divided into four basic areas. The example used in this section is the IOA Log screen.

Table 24 Basic IOA Screen Areas

Screen Area	Description
Screen Description and Message Line	This line at the top of the screen describes the purpose of the screen (in the example screen, "IOA Log"). A screen identifier may appear in the upper right corner (in the example screen, 5). This line is also used to display messages.
Screen Header and Command Area	This area is used for online commands, and, where applicable, headings of the screen data.
Data Area	On some screens, the data area can be scrolled. For more information, see "Scrolling Commands" on page 74 .
Screen Bottom	This area of the screen usually contains a list of available commands or options (In the example screen, SHOW, GROUP, CATEGORY, and SHPF), or a brief explanation about screen usage. The current time is displayed in the lower right corner.

Figure 6 IOA Log Screen

FILTER: ----- IOA LOG -----					(5)
COMMAND ==>					SCROLL==> CRSR
SHOW LIMIT ON ==>					DATE 291201 - 010102
DATE	TIME	ODATE	USERID	CODE	----- M E S S A G E -----
311201	184915	311201	K48	SUB13AI	JOB K48RUN1 / OID=005W9 SUBMITTER STARTED
					PROCESSING JOB ON SYSTEM: OS35
311201	184915	311201	K48	SUB133I	JOB K48RUN1 K48RUN /27255 OID=005W9
					SUBMITTED FROM LIBRARY (P) K48.LIB.JOB
311201	184918	311201	K48	SPY28GI	JOB K48RUN1 K48RUN /27255 OID=005W9 TAPE
					DRIVE UNITS USED=00 00
311201	184918	311201	K48	SPY281I	JOB K48RUN1 K48RUN /27255 OID=005W9 START
					01365.1849 STOP 01365.1849 CPU 0MIN
					00.05SEC SRB 0MIN 00.00SEC 0.00 4AOS35
311201	184918	311201	K48	SPY254I	JOB K48RUN1 K48RUN /27255 OID=005W9
					SCANNED
311201	184918	311201	K48	SEL216W	JOB K48RUN1 K48RUN /27255 OID=005W9
					UNEXPLAINED COND CODE 0015 STEP EXEC /
311201	184918	311201	K48	SEL214I	JOB K48RUN1 K48RUN /27255 OID=005W9 RERUN
					NEEDED
311201	184918	311201	K48	SEL205I	JOB K48RUN1 K48RUN /27255 OID=005W9 RERUN
					IN PROCESS USING MEM K48RUN1
311201	184918	311201	K48	SEL286I	JOB K48RUN1 K48RUN /27255 OID=005W9
					WAITING FOR CONFIRMATION
CMDS: SHOW, GROUP, CATEGORY, SHPF					08.57.11

Commands and PFKeys

Commands are entered by typing a command in the **COMMAND** field and then pressing **Enter**, or by pressing a predefined PFKey, or a combination of both.

It is not necessary to enter the full command name; the shortest unique abbreviation of the command is sufficient. If the abbreviation is ambiguous, an appropriate message is displayed in the message area.

IOA commands are flexible; you can change command syntax or provide aliases (synonyms) to suit your site. If you want to add or change a command syntax, consult BMC Software Customer Support. The examples provided in this chapter exhibit the original command syntax supplied with this INCONTROL product.

PFKey command assignments can be site-customized. It is possible to assign PFKeys differently for each screen. To change PFKey command assignments, see your INCONTROL administrator.

Supplied PFKey definitions are consistent throughout most of the screens. For example: **PF08/PF20** is used to scroll down (forward) on all INCONTROL screens where scrolling is possible.

Table 25 Common PFKey Definitions

PFKey	Description
PF01/PF13	HELP
PF02/PF14	SHOW (where applicable) ^a
PF03/PF15	END – exit current screen and go back one level
PF04/PF16	RESET (where applicable)
PF05/PF17	FIND (where applicable)
PF06/PF18	=6 – transfer to TSO screen/application or to UTILITIES screen ^b
PF07/PF19	UP – scroll backward
PF08/PF20	DOWN – scroll forward
PF10/PF22	LEFT or PREV (where applicable)
PF11/PF23	RIGHT or NEXT (where applicable)
PF12	RETRIEVE – retrieves a sequence of commands and options entered by the user during the current session. These commands and options are displayed in reverse order on the command line of the current screen.
PF24	SHPF

^a When the IOA Online facility is activated in ISPF mode (as an ISPF application), **PF02/PF14** are usually assigned the ISPF SPLIT command. For more information, see [“IOA Under ISPF” on page 79](#).

^b Disabled under ROSCOE/ETSO, CICS, VTAM, IMS/DC, IDMS/DC, COM-LETE, and TSO cross memory option.

To see the PFKey assignment of the screen with which you are working, type reserved command SHPF in the command line and press **Enter**. A window describing the current PFKey assignment appears on the screen. Press **Enter** again to close the window.

Figure 7 PFKey Assignment Window

```

FILTER: ----- IOA LOG -----(5)
COMMAND ==> SCROLL==> CRSR
SHOW LIMIT ON ==> DATE 291201 - 010102
DATE    TIME    ODATE  USERID  CODE    ----- M E S S A G E -----
311201  184915  311201  K48      SUB13AI JOB K48RUN1 / OID=005W9 SUBMITTER STARTED
                                PROCESSING JOB ON SYSTEM: OS35
311201  184915  311201  K48      SUB133I JOB K48RUN1 K48RUN /27255 OID=005W9
                                SUBMITTED FROM LIBRARY (P) K48.LIB.JOB
311201  184918  311201  K48      SPY28GI JOB K48RUN1 K48RUN /27255 OID=005W9 TAPE
                                DRIVE UNITS USED=00 00
311201  184918  311201  K48      SPY281I JOB K48RUN1 K48RUN /27255 OID=005W9 START
+-----+-----+-----+-----+-----+
|
| ENTER ENTER                                PF13  HELP
| PF01  HELP                                PF14  SHOW
| PF02  SHOW                                PF15  END
| PF03  END                                PF16  RESET
| PF04  RESET                              PF17  FIND
| PF05  FIND                                PF18  =6
| PF06  =6                                PF19  UP
| PF07  UP                                PF20  DOWN
| PF08  DOWN                              PF24  SHPF
| PF12  RETRIEVE
|
+-----+-----+-----+-----+-----+

```

If you type text in the COMMAND field and press a PFKey, the text in the COMMAND field is treated as a subparameter of the command assigned to the PFKey.

Two additional key definitions are:

Table 26 Additional Key Assignments

Key	Description
PA1	ABORT – forced exit If you press PA1 while in AutoRefresh mode (described on page 79), AutoRefresh mode is canceled.
PA2	Under native TSO and ROSCOE, the first time you press this key, the screen is refreshed. The second consecutive time, a copy of the screen is sent to be printed, or to a file, using DD statement PRTDBG. For terminal models supporting PA3, the PA3 key is defined in exactly the same way as PA2. When the IOA online facility is activated as an ISPF application, PA2 is controlled by ISPF, and only refreshes the screen. To print the screen, see “IOA Under ISPF” on page 79 . Under other online environments, such as CICS and VTAM, PA2 serves as a refresh only. Usually one of the PA keys is assigned a local print function.

For information on changing IOA PFKey definitions, see the appendix in the *INCONTROL for z/OS Administrator Guide*, which deals with modifying IOA Online facility commands.

Scrolling Commands

Scrolling conventions are very similar to the ISPF conventions of IBM. Two basic commands are used for scrolling:

Table 27 Scrolling Commands

Command	PFKey	Description
UP	(PF07/PF19)	Scroll up (backward).
DOWN	(PF08/PF20)	Scroll down (forward).

The commands can be entered by typing the command in the COMMAND field or by pressing the predefined PFKey.

The scrolling amount is determined by the content of the SCROLL field in the right corner of the screen header. Valid scrolling amounts are:

Table 28 Scrolling Amounts in the SCROLL Field

Scrolling Amount	Description
PAGE	Scroll a full page.
HALF	Scroll a half page.
CRSR	Scroll by cursor position. If the cursor is outside the data area, a full page is scrolled.
MAX	Scroll maximum available; for example, UP MAX scrolls to the top.

It is only necessary to type the first letter of the new amount in the SCROLL field in order to change the scrolling amount.

A scrolling amount other than that shown in the SCROLL field can be used by entering the amount directly after the scroll command itself, or by entering the scroll amount in the COMMAND field and pressing the appropriate scrolling PFKey. The scrolling amount in the SCROLL field remains unchanged.

Example

If PAGE is the value in the SCROLL field, to scroll to the bottom, type M (MAX) in the COMMAND field and press **PF08/PF20** (DOWN).

LOCATE Command

The LOCATE command, and its abbreviation, L, can be used to search for items in the NAME field in all “directory type” screens that contain scrollable data, such as the Calendar List screen. The syntax of the command is

`LOCATE string`

where *string* is the search string. Apostrophes ('single quotes') or quotation marks ("double quotes") are not required.

The search proceeds from the top of the list to the first item in the list that starts with the specified string. The cursor is positioned on the OPTION field at the beginning of the line containing the string, if found, or on the OPTION field of the alphabetically closest preceding value if the specified value is not found.

FIND Command

The FIND command, and its abbreviation, F, can be used in all screens that contain scrollable data to find and display the next occurrence of a character string. The syntax of the command is

`FIND string [fromcol] [tocol] [PREV]`

where

- *string* is the search string
Mandatory.
- *fromcol* is the first column in the search range
Optional.
- *tocol* is the last column in the search range
Optional.
- PREV is the indicator that the search must move backward, instead of forward, from the current cursor position
Optional.

General Rules

If the string contains blanks, enclose the string with apostrophes ('single quotes') or quotation marks ("double quotes"). For example:

`FIND 'WAIT SCHEDULE'`

The column range searched can be limited by entering *fromcol* or *tocol* values, or by entering both *fromcol* and *tocol* values.

The search for the string proceeds from the current cursor position forward, or backward if PREV is entered. If the string is found, the cursor is positioned at the start of the string.

To repeat the find, to the next or previous occurrence of the string, press **PF05/PF17**.

NOTE

The following situations outline where the FIND command can, or should, be further modified to enhance its functionality.

- Some screens enable the user to limit the number of lines searched by a FIND command. This is discussed in the relevant screen descriptions.
 - In some screens, the FIND command does not detect information that is to the right or left of the information displayed in the monitor. To ensure detection of the desired string, the screen must be displayed in wraparound mode, when available, before executing the FIND command.
-

Text String Searches

The FIND command can also be used to search for text strings, in which case the command will find all instances of the string, regardless of whether the characters within the string are lowercase, uppercase, or mixed case. To search for a text string, include the letter *T* immediately before a quoted string.

For example,

```
FIND T'WAIT SCHEDULE'
```

will find WAIT SCHEDULE, and it will also find *wait schedule*, and *Wait Schedule*, and any other case variant.

Text string searches are the default. If your system default is for text strings, You do not need to include the *T* if you perform a text string search. Your INCONTROL administrator can change the default to character string. In this case you do not need to include the *C* if you perform a character string search.

Character String Searches

The FIND command can be used to search for character strings, in which case the command will find all instances of the string, but only where the string contains characters that match the case specified. To search for a character string, include the letter *C* immediately before a quoted string.

For example,

```
FIND C'WAIT SCHEDULE'
```

will find WAIT SCHEDULE, but it will not find *wait schedule*, or *Wait Schedule*, or any other case variant.

CANCEL and RESET Commands

CANCEL and RESET commands are entered in the COMMAND field.

The CANCEL command cancels changes made in a definition screen, such as the IOA Calendar Definition screen, and exits the screen.

The RESET command (**PF04/PF16**) cancels Edit environment options specified in a definition screen. It does not cancel changes already made and it does not exit the screen or cancel Edit environment mode. For more information about the Edit environment, see [Appendix A, “Editing Rule Definitions in the IOA Edit Environment,”](#)

The RESET command (**PF04/PF16**) can also be used in most windows, for example, the Show Screen Filter window, to cancel changes and close the window.

Online Help

The following types of online help are available for INCONTROL screens:

Screen Help

Provides information about the entire screen. This help is available on all INCONTROL screens and is accessed by pressing the HELP key (**PF01/PF13**) while the cursor is positioned on the COMMAND field in the screen.

Line-Sensitive Help

Provides information about the fields on a particular line on a screen. This help is available on several INCONTROL screens. It is accessed by pressing the HELP key (**PF01/PF13**) while the cursor is positioned on the desired line of the screen.

Figure 8 IOA Help Screen

```

----- IOA HELP SCREEN ----- (CTMHDT2 )
COMMAND ==>                                SCROLL==> CRSR

Calendar List Screen
=====

The Calendar List screen displays a list of calendars (members) in the
specified library. This screen can be entered directly from the entry
panel or upon exiting the Year List screen.

By default, only calendar names are listed in the screen. However, if
the default has been modified at time of installation, statistical
information is displayed for each calendar name.

Use the scrolling PFKeys to scroll forward (PF08/PF20) and backward
(PF07/PF19) on the Calendar List.

To return to the entry panel, press END (PF03/PF15).

Options of the Calendar List Screen
-----
To request one of the following options, specify the option in the OPT
ENTER END OR PF03/PF15 TO EXIT THE HELP SCREEN                                08.55.40

```

If line-sensitive help is not supported in a screen, pressing the HELP key (**PF01/PF13**) from anywhere in the screen displays the beginning of the Help panel.

Help can be scrolled using standard scrolling conventions.

To return to the original screen, use the END command (**PF03/PF15**).

The Help member name appears on the right in the Help screen header. Members containing the Help descriptions can be found in the IOA MSG library.

AutoRefresh Mode

Certain INCONTROL screens, as noted in this chapter where appropriate, support AutoRefresh mode. A screen display in AutoRefresh mode is automatically updated periodically with the most current data.

AutoRefresh mode can only be activated under native TSO or under ISPF. AutoRefresh mode is activated by the AUTO command. The format of the command is

```
AUTO n
```

where *n* is any number of seconds from 1 through 99.

The screen is updated when the AUTO command is issued, and then periodically updated according to the interval (in seconds) specified in the AUTO command. A counter at the top of the screen displays the number of times the screen has been refreshed.

Example

The AUTO 5 command refreshes the screen every 5 seconds.

Cancelling AutoRefresh Mode

Under native TSO, the recommended method of cancelling AutoRefresh mode is as follows:

- For short interval values – Press **Enter**. Whenever **Enter** is pressed, or a command is issued, AutoRefresh mode is automatically cancelled at the end of the current interval.
- For long interval values – Press **Attn (PA1)** once.

Under ISPF, press **Attn (PA1)** or **Esc** once to cancel AutoRefresh mode.

IOA Under ISPF

The IOA Online facility can be activated as an ISPF application. As such, it can work in ISPF split screen mode like any other ISPF application.



WARNING

Multiple calls to the IOA ISPF interface can be performed in ISPF split screen mode as long as all invocations are for the same IOA environment. Otherwise, the results may be unpredictable.

The command line of the IOA Online facility is controlled by IOA. It is not possible to enter ISPF commands in an IOA screen. Two ISPF commands must be defined to PFKeys:

Table 29 ISPF Commands that must be defined for PFKeys

Command	PFkey
SPLIT	(usually PF02/PF14)
SWAP	(usually PF09/PF21)

The rest of the PFKeys are controlled by IOA PFKey definitions, which are in the IOA PARM library.

It is possible to assign TSO/ISPF commands such as PRINT to PFKeys, or to change PFKey definitions by performing the following steps:

- 1 Exit from IOA and ISPF to the READY prompt.
- 2 Type the following command and press **Enter**:

```
ISPSTART PANEL(ISR@PRIM) NEWAPPL(CTM)
```

This command brings you to ISPF.

- 3 Type the KEYS command and press **Enter**. A set of key definitions is displayed.
- 4 Modify the key definitions as desired and exit from ISPF.

NOTE



ISPF KEY definitions for the following ISPF commands take precedence over IOA PFKey definitions: SPLIT, SWAP, KEYS, PRINT, PFSHOW. For example, if **PF02** is defined as SPLIT in ISPF, an IOA definition for **PF02** is ignored in online screens.

For all other ISPF commands, such as UP or DOWN, the key definitions in ISPF are ignored and the PFKey is interpreted according to the definition in the IOA Online facility.

Under ISPF, IOA Option 6 activates the Online Utilities panel, which is described in [“IOA Online Utilities Menu” on page 254](#). For more information about these utilities, see the *INCONTROL for z/OS Utilities Guide*.

For more information on changing IOA PFKey definitions, see the appendix in the *INCONTROL for z/OS Administrator Guide* that deals with modifying IOA Online Facility Commands.

IOA Editor

The IOA Editor enables you to edit members of a partitioned data set (PDS) using an editor similar to the ISPF editor. Enter **EDMEM** in the command line of any screen to display the Edit Entry Panel window, as shown in [Figure 9](#).

Figure 9 IOA Editor Edit Entry Panel

```

----- IOA PRIMARY OPTION MENU -----(1)
OPTION ==>                                USER      N06

IOA                                CONTROL-D/V      CONTROL-0

4 COND/RES                        A MISSION STATUS      OR RULE DEFINITION
5 +-----+-----+-----+-----+-----+-----+ ICS
6 |                                EDIT ENTRY PANEL      |
7 |                                |                      |
8 | LIBRARY ==>                    | LOG                |
IV|                                | OPTS               |
  | MEMBER ==>                    | US                 |
  |                                | R                  |
  | FILL IN PARAMETERS AND PRESS ENTER TO CONTINUE OR PF3 TO EXIT |
CONTR|-----+-----+-----+-----+-----+-----+
2 JOB SCHEDULE DEF                BB BALANCING STATUS      TR RULE DEFINITION
3 ACTIVE ENV.                     BM MISSION DEF          TP POOL DEFINITION
C CMEM DEFINITION                 BV DB VARIABLE DEF       TV VAULT DEFINITION
                                   BR RULE DEFINITION        TI INQ/UPD MEDIA DB
                                   BA RULE ACTIVITY          TC CHECK IN EXT VOL

COMMANDS: X - EXIT, HELP, INFO OR CHOOSE A MENU OPTION      19.12.05

```

To create a new member or edit an existing member, fill in the **LIBRARY** and **MEMBER** parameters and press **Enter**. The IOA Editor screen is opened for editing, as shown in [Figure 10](#).

NOTE



If the member already exists in the specified library, the member is displayed for editing in the IOA Editor. Similarly, if you accessed the IOA Editor screen from line option J in either screen 2 or screen 3, the member in the library referred to in the schedule definition member will be displayed for editing.

Figure 10 IOA Editor

```
----- I O A   E D I T O R ----- (EDMEM)
COMMAND ==>                               SCROLL==> CRSR
ROW      PROD.V610.DEMO(TEST)              COL 001 072

.....
.....
.....
.....
.....
.....
.....
.....
.....
***** B O T T O M   O F   D A T A *****

OPTIONS:  I INSERT  D DELETE  R REPEAT  C COPY  M MOVE  UC/LC UPPER/LOWER CASE
```

IOA Editor PFKey Functions

While working within the IOA Editor, PFKeys perform the functions shown in Table 30:

Table 30 PFKey Functions Within the IOA Editor Screen

PFKey	Description
PF01/PF13	Activates online help.
PF02/PF14	Saves the current member.
PF03/PF15	Terminates the editing session. If the edited member has been changed the member will be saved automatically.
PF04/PF16	Cancels the editing session without saving changes.
PF05/PF17	Invokes the Find facility.
PF07/PF19	Scrolls forward.
PF08/PF20	Scrolls backward.
PF10/PF22	Scrolls left.
PF11/PF23	Scrolls right.

Commands of the IOA Editor Screen

Table 31 describes editing commands that can be executed by entering the command in the COMMAND line.

Table 31 IOA Editor Command Line Commands

Command	Description
SAVE	Saves all new data without terminating the edit session.
CANCEL	Terminates the edit session without saving new data.
COPY	Enables you to import a member from a specific library.

[Table 32](#) describes editing commands that can be executed by entering the command in the leftmost position of the applicable row.

Table 32 IOA Editor Row Commands (part 1 of 2)

Command	Description
I	Inserts a new line below the current line. To insert more than one line for new data, enter Inn , where <i>nn</i> indicates the number of new lines to be inserted below the current line.
D	Deletes the current line. To delete more than one line, enter Dnn , where <i>nn</i> indicates the number of lines to be deleted below the current line. You can delete a block of lines by typing DD at the beginning of the first line of the block, and then entering DD at the beginning of the last line of the block.
R	Repeats the current line. To repeat a single line one or more times, enter Rnn , where <i>nn</i> indicates the number of times the current line is to be repeated. You can repeat a block of lines by typing RR at the beginning of the first line of the block, and then entering RR at the beginning of the last line of the block.
C	Identifies the source line for a copy operation. To copy more than a single line, enter Cnn , where <i>nn</i> indicates the number of lines to be copied. You can also copy a block of lines by typing CC at the beginning of the first line of the block, and then entering CC at the beginning of the last line of the block.
M	Identifies the source line for a move operation. To move more than a single line, enter Mnn , where <i>nn</i> indicates the number of lines to be moved. You can also move a block of lines by typing MM at the beginning of the first line of the block, and then entering MM at the beginning of the last line of the block.
A	Identifies the destination of a copy or move operation. When a line or block of lines has been selected for copying or moving, enter A at the point after which the copied lines are to be inserted.
B	Identifies the destination of a copy or move operation. When a line or block of lines has been selected for copying or moving, enter B at the point before which the moved lines are to be inserted.

Table 32 IOA Editor Row Commands (part 2 of 2)

Command	Description
LC	Changes text in a line from uppercase to lowercase. To change text in more than a single line to lowercase, enter LCnn , where <i>nn</i> indicates the number of lines to be changed to lowercase.
UC	Changes text in a line from lowercase to uppercase. To change text in more than a single line to uppercase, enter UCnn , where <i>nn</i> indicates the number of lines to be changed to uppercase.

IOA SET Command Panel

The IOA SET Command Panel enables you to set and stop TRACE levels, choose the language that is used in online screens and to set a dollar sign representation that will be used in online screens for system variables of type %%\$VAR. Enter **SET** in the command line of any screen to display the SET Command Panel window, as shown in Figure 11.

Figure 11 IOA SET Command Panel



The process of setting TRACE levels and turning off a particular TRACE, and the process of setting language preferences for online screens and messages, begins in the SET Command Panel.

Using the SET Command Panel to set and end TRACE Levels

Setting the TRACE level can help you monitor certain IOA Online facility and INCONTROL functions, such as security checks.

The following steps explain how to set or turn off a TRACE level:

- 1 Type a TRACE level number, from **1** through **256**, in the TRACE level field of the SET Command Panel.
- 2 In the (Trace level 1-256, ON or OFF) field, type **ON** to set a TRACE level, or **OFF** to turn off a TRACE level.
- 3 Press **Enter** to confirm the setting, in which case the following message is displayed:

```
CTMA2AI TRACE LEVEL nnn WAS SET xxx
```

where

- *nnn* is the TRACE level number
- *xxx* indicates whether the TRACE level was set ON or turned OFF

NOTE

TRACE level settings take effect immediately.



Using the SET Command Panel to set a dollar sign representation

Setting the dollar sign representation influences how System variables are shown in online screens.

The following steps explain how to set the dollar sign representation:

- 1 Type a \$ character in the Dollar field using your keyboard.
- 2 Press **Enter** to confirm the setting, in which case the following message is displayed:

```
CTMA2DI THE NEW DOLLAR REPRESENTATION IS "c"(X'yy')
```

where

- *c* is \$ character you set
- *yy* is the EBCDIC hexadecimal code for \$

NOTE

There are differences in the EBCDIC hexadecimal code for the \$ (dollar sign) character on keyboards that have been adapted to show local or national symbols.



Using the SET Command Panel to set Language Preferences

Setting the LANGUAGE influences the online screens and messages in subsequent sessions.

The following steps explain how to set language preferences:

1 In the LANGUAGE field, type one of the following sets of characters to select a language preference:

- ENG, to set English as the preferred language
- FRA, to set French as the preferred language
- GER, to set German as the preferred language
- JPN, to set Japanese as the preferred language

2 Press **Enter** to confirm the setting, in which case the following message is displayed:

```
CTMA27I THE NEW LANGUAGE WILL BE USED FROM THE NEXT LOGON TO  
IOA
```

NOTE

Language preference settings do not take effect until your next logon to the system.



IOA TSO Command Processor Screen

The IOA TSO Command Processor screen can be entered only when the IOA Online facility is activated as a TSO application. It cannot be entered when the IOA Online facility is activated as an ISPF application or activated under a non-TSO environment.

The TSO screen enables activation of any TSO command without exiting the IOA Online facility. For example, a typical program activated under the TSO screen is ISPF. Therefore all ISPF/PDF facilities and functions, such as editing a member or scanning job output, can be activated while you are working under the IOA Online facility.

To activate a TSO command, type the command in the COMMAND field and press **Enter**.

Figure 12 IOA TSO Command Processor Screen

```

----- IOA TSO COMMAND PROCESSOR -----(6)
COMMAND ==> ISPF

PLEASE ENTER TSO COMMAND
15.32.52

```

NOTE

CLISTs cannot be activated from the TSO screen. To activate a CLIST, first activate ISPF and then execute the CLIST under ISPF.

TSO commands can also be activated directly from any IOA online screen by typing TSO in the COMMAND field.

Transfer of Control Between the TSO Application and the IOA Online Facility

You can return to the IOA Online facility from the TSO application by simply exiting the TSO application in a normal manner. However, this method can be time consuming and inconvenient if an ISPF application or a similar TSO application is activated.

If the TSO application can issue a TSO command, it is possible to transfer control to the IOA Online facility, and vice versa, without exiting the TSO application.

While working under the TSO application, for example, under ISPF, issue the command:

```
TSO CTMTTRA {n | =n}
```

where *n* is the online screen number.

The requested screen is displayed as it was when you transferred from it.

To return to the TSO application, use the =6 command (**PF06/PF18**). The application remains in the same state as when you transferred from it.

It is recommended that you simplify transfer between screens by permanently assigning one of your PFKeys under ISPF (or SDSF, and so on) to the command TSO CTMTTRA. Once this key assignment is made, you no longer need to type the full transfer command. Instead, you merely type the IOA option number or code in the COMMAND field and press the assigned PFKey. You are transferred to the desired screen.

NOTE



You must activate ISPF under the IOA Online facility if you want to use the control transfer feature.

Rule Definition Facility

The CONTROL-M/Tape Rule Definition facility is composed of a series of screens that enable you to view, create, and modify rule definitions and parameters.

Rules are the main CONTROL-M/Tape entities that manage media at your site. A rule is a user-defined list of instructions (parameters) whose execution is automatically triggered when specified media are accessed. Real-time media management processes and maintenance procedures can be tailored to meet your site's needs through rule definitions.

Rule Definition

Rule definitions under CONTROL-M/Tape are stored in libraries (partitioned data sets). A library contains rule tables (members), and each table contains rules (criteria) for media management functions. A rule table generally contains rules related to a specific topic, such as backups. Although most sites designate a primary rule definition library, the number of rule definition libraries you can use is unlimited.

NOTE



The CONTROL-M/Tape Rule Definition facility does not support members that have been compressed using the ISPF PACK option.

The number of rule tables in a library, the number of rules in a table, and the size of each rule definition, are all calculated dynamically and are not dependent on parameter specification or optional ZAPs.

Accessing the Rule Definition Facility

The Rule Definition facility contains the following screens:

Table 33 Rule Definition Facility Screens

Screen	Description
Rule Definition Facility entry panel	Allows specification of parameters that determine which screen is displayed.
Table List screen	Displays the list of tables (members) in the specified Rule library.
Rule List screen	Displays the list of rules in the selected table.
Rule Definition screen	Displays the parameters of the selected rule definition. This is the main screen of the facility.

To enter the Online Rule Definition facility, select option TR in the IOA Primary Option menu. The CONTROL-M/Tape Rule Definition Facility entry panel is displayed.

Creating Tables

Tables can be created in any of the following ways:

- By specifying the new table name in the entry panel and pressing **Enter**.
- By using the SELECT command (described later) to specify the new table name in the Table List screen and pressing **Enter**.

As a result of using either of the above methods, a skeletal rule definition (meaning, one with most fields left blank) is displayed in the rule definition screen.

Fill in the blanks and save the screen entries. The table is created and the rule definition is the first and only definition in the Rule list of the table. As additional rule definitions are created in the table (described below), they are added to the list.

NOTE



Upon exiting the Rule List screen, if changes were made in at least one rule definition, an Exit Option window is displayed. One field of the window displays the table name. This value can be changed to a new table name that creates a new table in which the rule definitions are saved.

Creating Rule Definitions

Rule definitions can be created using either of two basic methods:

- A skeletal rule definition can be created by specifying the name of a new rule definition in the entry panel. (The table specified in the entry panel can be either a new or an existing table.) In this case, virtually all fields of the rule definition are empty.
- A copy of an existing rule definition can be created using the INSERT option (described later) in the Rule List screen. In this case, most fields of the new rule definition have the same values as the fields in the copied rule definition.

Performing Operations on Tables and Rules

Many operations can be performed on tables and on the rule definitions in them. These operations are performed using commands and options in the various screens of the Rule Definition facility.

Below is a brief summary of some of the major operations possible within the facility. Additional options and commands are explained following the summary.

Accessing (Editing or Browsing) a Table and its Rules

A table (meaning, the rule definitions in the table) can be browsed or edited.

When browsed, the table cannot be modified or updated. When the table is edited, new rule definitions can be added and existing rule definitions can be modified or deleted.

Browsing, however, has advantages:

- Access and exit are quicker than in editing.
- Rule list and rule definitions that are in use by another user can be viewed.
- Access for browsing might be granted, even though access for editing might be denied due to site security requirements.

To browse a table (and its rule list and rule definitions), use the BROWSE option in the Table List screen.

Specifying the table name in the entry panel, or using the SELECT option in the Table List screen, provides edit access.

Depending on user profile definitions, if the table requested for editing is in use, access is either granted in Browse mode, or access will not be granted.

Copying a Rule to Another Table

Rules can be copied from one table to another using the COPY option in the Rule List screen. For more information, see “Copying Rules to Another Table” below.

Deleting a Table or a Rule

Unneeded rules can be deleted using the DELETE option in the Rule List screen. For more information, see “Options of the Rule List Screen.” Unneeded tables can be deleted using the DELETE option in the Table List screen. For more information, see “Deleting Tables” (below).

Saving Modifications

All changes made to a table and its rule definitions are kept in memory until the table is exited. Upon exiting the table, the user can choose to save or cancel the changes. For more information, see “Exiting the Rule Definition Screen” on page 119.

Rule Definition Entry Panel

The Rule Definition Entry Panel is displayed upon entering the Rule Definition facility (option TR in the IOA Primary Option menu).

Figure 13 Rule Definition Entry Panel

----- CONTROL-M/Tape RULE DEFINITION ENTRY PANEL -----(TR)

COMMAND ==>

SPECIFY LIBRARY, TABLE NAME, RULE NAME

LIBRARY ==> CTP.PROD.RULES

TABLE ==> (Blank for table selection list)

RULE ==> (Blank for rule selection list)

AUTOMATIC RULE SORTING ==> Y (Y/N)

SHOW SCHEDULING CRITERIA ==> Y (Y/N)

SHOW RULE DOCUMENTATION ==> N (Y/N)

AUTO-SAVE DOCUMENTATION ==> N (Y/N)

USE THE COMMAND "SHPF" TO SEE PFK ASSIGNMENT

10.08.05

NOTE



If you use the selection list fields, their values are not erased until you exit the entry panel by pressing **END (PF03/PF15)**.

To open the desired display

Fill in the LIBRARY, TABLE, and RULE fields.

To display the list of tables in a library

- 1 Type the library name.
- 2 Either leave the table name blank, or type part of a table name together with mask characters (* and ?).
- 3 Press **Enter**.

To display the list of rules of a specific rule

- 1 Type the library name.
- 2 Type the table name.
- 3 Press **Enter**.

If the table does not exist, the screen for defining a new rule in the table is displayed.

To display the details of a specific rule (Rule Definition screen)

- 1 Type the library name.
- 2 Type the table name.
- 3 Type the rule name.
- 4 Press **Enter**.

If the table does not exist, or if the rule for the specified table does not exist, the screen for defining a new rule in the table is displayed.

NOTE



If you enter the screen for defining a new rule and want to leave the screen without defining a rule, use the CANCEL command.

To display the Search window

- 1 Type the library name.
- 2 Type the rule name.
- 3 Either leave the table name blank, or type part of a table name together with mask characters (* and ?).
- 4 Press **Enter**.

To create a new table

- 1 Type the library name.
- 2 Type a new table name.
- 3 Press **Enter**.

The Rule definition screen, for defining the first rule in the new table, is displayed.

Rule Display Criteria

You can modify the way rules are displayed based on the display criteria you select in the AUTOMATIC RULE SORTING, SHOW SCHEDULING CRITERIA, SHOW RULE DOCUMENTATION, and AUTO-SAVE DOCUMENTATION LIBRARY, TABLE, and RULE fields of the entry panel, as described below:

- Type Y or N in the AUTOMATIC RULE SORTING field to determine whether newly created rules are placed in correct sort order. For more information, see [“Rule Order” on page 404](#).
- Type Y or N in the SHOW SCHEDULING CRITERIA field to determine whether the Basic Scheduling parameters for the rule are displayed when the rule is displayed. For more information, see [“Display and Non-Display of Scheduling Criteria” on page 114](#).
- Type Y or N in the SHOW RULE DOCUMENTATION field to determine whether rule documentation lines are displayed when the rule is displayed. For more information, see [“Rule Documentation” on page 116](#).
- Type Y or N in the AUTO-SAVE DOCUMENTATION field to determine whether changes made to documentation are automatically saved (meaning, without special prompting) when updating the rule. For more information, see [“Rule Documentation” on page 116](#).

Search Window

The Search window allows you to search for the specified rule in tables in the specified library. Tables in which the rule have been found are then displayed in the Rule List screen.

Figure 14 Rule Definition Entry Panel Search Window

```

----- CONTROL-M/TAPE RULE DEFINITION ENTRY PANEL----- (TR)
COMMAND ==>

SPECIFY LIBRARY, TABLE NAME, RULE NAME

LIBRARY ==> CTT.PROD.RULES
TABLE    ==>                                     (Blank for table selection list)
RULE     ==>                                     (Blank for rule selection list)

AUTOMATIC RULE SORTING ==>
SHOW SCHEDULING CRITERIA ==>
SHOW RULE DOCUMENTATION ==>
AUTO-SAVE DOCUMENTATION ==>

+-----+
| PLEASE SELECT ONE OF THE FOLLOWING: |
| 1 - STOP SEARCH IMMEDIATELY        |
| 2 - ASK AGAIN AFTER 000010 TABLES |
| 3 - UNCONDITIONAL SEARCH           |
|                                     |
| NUMBER OF TABLES IN LIBRARY: 000010 |
| NUMBER OF SEARCHED TABLES : 000000 |
| NUMBER OF SELECTED TABLES: 000000  |
+-----+

USE THE COMMAND "SHPF" TO SEE PFK ASSIGNMENT 18.12.28

```

To close the Search Window without performing any action, press END (**PF03/PF15**).

To perform a search, select one of the following choices and press **Enter**:

3 - UNCONDITIONAL SEARCH

Searches all tables in the specified library.

The search continues uninterrupted unless and until you select option 1 (Stop Search Immediately).

2 - ASK AGAIN AFTER *number* TABLES

Searches the specified number of tables in the specified library, and then pauses. The search number can be modified. Default:10.

- Continue the search by pressing **Enter**.
- Stop the search by selecting option 1 (Stop Search Immediately).

If any members are found, the Rule List is displayed listing those tables.

During the search, the following information is displayed at the bottom of the window:

- Number of tables in library. Lists the total number of tables in the specified library.

- If any tables are selected during the search, the Rule List is displayed listing those tables. If no tables are selected, the Search Window is closed and a message is displayed.

TABLES OF LIBRARY CTT PROP. RULES	(TD)
-----------------------------------	------

Options of the Rule Table List Screen

To request one of the following options, specify the option in the OPT field to the left of the rule table name and press **Enter**.

Table 34 Options of the Table List Screen

Option	Description
S (SELECT)	<p>Display the list of rules in the rule table for any purpose, including editing and modification. Only one rule table can be selected at a time.</p> <p>Note: If the S (Select) option is specified in the Rule Table List screen for a table that is currently in use (selected) by another user, then depending on User profile parameter SSCHBRO, either the Rule List screen is not displayed (meaning, the Rule Table List screen remains displayed; this is the default), or the Rule List screen is displayed in Browse mode. In either case, an appropriate message is displayed.</p>
B (BROWSE)	Display a list of rules in a rule table for browsing. Only one rule table can be selected at a time.
D (DELETE)	Delete the rule table (member) from the library. Multiple rule tables can be selected. A confirmation window is displayed. For more information, see “Deleting Rule Tables” below.

NOTE



Users whose access to options has been limited by the INCONTROL administrator can only access the Browse option.

Deleting Rule Table

To delete tables, specify option D in the OPT field by the rule table names and press **Enter**.

The following confirmation window is displayed, in sequence, for each rule table selected for deletion:

Figure 16 Rule Definition Facility Delete Table Confirmation Window

[illegible]

Type **Y** (Yes) in the window to confirm the delete request.

Type **N** (No) in the window to cancel the delete request.

NOTE



If PDSMAN is operational at your site, \$\$\$SPACE members are not deleted.

A message is written to the IOA Log file for each rule table deleted.

Rule List Screen

The Rule List screen displays the list of rules in a specified library. This screen can be entered directly from the Rule Definition entry panel or the Rule Table List screen, or upon exiting from the Rule Definition screen.

NOTE



If the S (Select) option is specified in the Rule Table List screen for a table that is currently in use (selected) by another user, then depending on User profile parameter SSCHBRO, either the Rule List screen is not displayed (meaning, the Rule Table List screen remains displayed; this is the default), or the Rule List screen is displayed in Browse mode. In either case, an appropriate message is displayed.

Figure 17 Rule Definition Rule List Screen

```

RULES OF LIBRARY: CTT.PROD.RULES                                TABLE: ADM0002
COMMAND ===>                                                    SCROLL===> CRSR
OPT  RULE ----- DESCRIPTION -----
      ADMCLEAN    CLEAN-UP OF EXPIRED TAPES AND CARTRIDGES
      JOB0012     SET VAULT PATTERN OF JOB0012 VOLUMES
      JOB0013     SET VAULT PATTERN OF JOB0013 VOLUMES
      JOB0099     SET VAULT PATTERN OF JOB0099 VOLUMES
      M38SCRT     SCRATCH OF OUTDATED M38 TAPES
      M43SCRT     SCRATCH OF OUTDATED M43 TAPES
      MODRES      MODIFY RESOURCE COUNT
      MNTCHK      MOUNT CHECK - FORCE CERTAIN CONTROL-M JOBS
      SHOUTSCR    SHOUT ON SCRATCH OF CERTAIN JCL ACCOUNTS
===== >>>>>>>>>>>>>>>> NO MORE RULES IN THIS TABLE <<<<<<<<<<<<<<<< =====

```

The Rule list is displayed either in sorted or unsorted order, depending on the value of the AUTOMATIC RULE SORT field in the Rule Definition entry panel. For more information about rule sorting, see [“Rule Order” on page 404](#).

NOTE



If the Rule list was previously displayed in unsorted order but is currently sorted (due to the setting of the AUTOMATIC RULE SORT field in the Rule Definition entry Panel), an appropriate message is displayed at the top of the screen as a reminder.

Use the scrolling PFKeys to scroll the Rule list forward (PF08/PF20) and backward (PF07/PF19).

To exit the Rule List screen, press END (**PF03/PF15**). For more information see “Exiting the Rule List Screen” in this chapter.

Format of the Rule List Screen

Next to each rule name in the Rule list, certain information can be displayed. The type and format of this information depends on whether the screen is displayed in DATA format, DESC format, or STAT format:

- In DESC format, the rule's description, taken from the DESC field of the rule definition, is displayed. Default.
- In DATA format, the rule's application and group names, taken from the APPL and GROUP fields of the rule definition, are displayed.

- In STAT format, the rule's ISPF statistical information is displayed.

By default, the rule list is displayed in DESC format. To change formats, use the DESC, DATA or STAT commands, described below.

Commands of the Rule List Screen

The following commands can be specified in the COMMAND field of the Rule List screen.

Table 35 Commands of the Rule List Screen

Command	Description
DESC	Command DESC displays the rule description next to the rule name. The description is taken from the DESC field in the rule definition.
DATA	Command DATA displays the rule's SEQUENCE PRIORITY (PRI), DATASET, and JOBNAME values from the rule definition, as well as the MORE field. If MORE is set to Y, then the rule definition contains ON parameters other than DATASET and JOBNAME. For more information on these and other fields in the Rule Definition Screen, see the description in "General Parameters" in "Rule Definition Screen" below.
STAT	Command STAT displays the following ISPF-like statistical information about the rule next to the rule name: version and modification numbers, creation date, last modification date, and user ID.

Options of the Rule List Screen

Specify one of the following rule processing options by marking the option to the left of the rule name and pressing **Enter**:

NOTE



If the Rule List screen is displayed in Browse mode, options D (Delete) and I (Insert) are not available.

Table 36 Options of the Rule List Screen (part 1 of 2)

Option	Description
S (SELECT)	Display the Rule Definition screen, that contains details of the selected rule.
	If the Rule List screen is not displayed in Browse mode, the rule definition can be edited and updated. If the Rule List screen is displayed in Browse mode, the rule definition can only be browsed; it cannot be modified.

Option	Description
D (DELETE)	Delete a rule from the Rule list.
I (INSERT)	Insert a new rule in the Rule list. The Rule Definition screen appears with the same parameter values of the rule marked “I”, but the RULE NAME and DESCRIPTION parameters are empty for you to fill in. The new rule is added after the rule marked “I” if Automatic Rule Sort is disabled. Otherwise, the rule is inserted in its correct place in the sort. For more information, see “Rule Order” on page 404 .
C (COPY)	Copy the rule to another table (described later in this chapter). Multiple rules can be selected.

To delete rules, specify option D in the OPT field to the left of the rule names and press **Enter**.

The rule is removed. When you exit the Rule List screen, a confirmation window is displayed:

[illegible]

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Figure 19 Rule List Screen Copy Window

The window contains the following fields (some fields contain default values that can be modified):

Field	Description
LIBRARY	Library containing the table into which the rule should be copied. Must be an existing library. Default: the current library
TABLE	Name of the table into which the rule should be copied.
	Note: A rule can only be copied to another table. It cannot be copied to its own table (even if the rule is renamed). If the specified table does not exist, the table is created when the request is performed.
RULE	Name of the rule to be copied. If multiple rules are selected, the window is first displayed with the first selected rule. As each request is preformed or canceled, the next requested rule name appears.

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To cancel a request, press END (PF03/PF15) or RESET (PF04/PF16).

Rule Definition Screen

The Rule Definition screen is used to define, display, and modify rule parameters for management of volumes and data sets. This screen can be entered directly from the entry panel or from the Rule List screen. Updating parameters is not permitted in Browse mode.

Rule parameters can fill more than one screen. Therefore, they are organized like a sheet of paper that can be “stretched” to any desired length. Use the scrolling conventions to scroll the rule parameters forward and backward.

The rule parameters are divided into the following basic groups:

- General Parameters (see the RULE NAME through DESCRIPTION fields in [Table 38 on page 105](#)).
- Selection Parameters (see ON DATASET field in [Table 39 on page 106](#)).
- Action Parameters (optional, see the DO statements in “[Action Parameters: DO Statement](#)” on page 107).
- Basic Scheduling Parameters (optional, see the DAYS through CONFCAL fields in [Table 41 on page 113](#)).

The groups are separated by a delimiter line.

Figure 20 Rule Definition Screen

```

RULE: JOB0099 LIB CTT.PROD.RULES TABLE: ADM0002
COMMAND ==> SCROLL==> CRSR
+-----+-----+-----+-----+-----+-----+-----+-----+
RULE NAME      JOB0099 GROUP PRODUCTION          MODE PROD (Prod/Test)
OWNER           M43       SEQUENCE PRIORITY 01 CONTINUE SEARCH Y   (Y/N)
DESCRIPTION     SET VAULT PATTERN OF JOB0099 VOLUMES
DOCMEM          JOBDACS DOCLIB CTT.PROD.DOC
=====
ON DATASET    = *                               And/Or/Not
=====
DO VAULT      = VAULTA
              UNTIL DATE                0101 YEAR 1999             And/Or
VAULT        = VAULTB
              UNTIL DATE                0101 YEAR 2000             And/Or
VAULT        = MAINLIB
              UNTIL DATE                0101 YEAR 2001             And/Or
VAULT        = 
DO CONDITION = JOB0099_CHANGE_VAULT ODAT +
               AT CLOSE
DO
=====
=====
DAYS                                         DCAL
                                           AND/OR
WDAYS ALL                                     WCAL
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y
DATES
CONFCAL SHIFT
===== >>>>>>>>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<<<<<< =====
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT 15.49.41

```

Each rule is composed of General parameters, followed by a group of ON statements called an ON block. Only one ON block can exist in each rule definition. The ON block, that is composed of media specifications, is followed by a group of DO statements (a DO block), that is used to specify rule processing instructions and actions to be performed by the rule. For more information about ON and DO block structure, see [“ON/DO Block Structures” on page 265](#).

To delete a parameter on the screen, erase it (press the EOF key or blank it out). If additional operations are required, CONTROL-M/Tape issues appropriate instructions.

The Rule Definition Screen can be exited in various ways. The most common is to press END (PF03/PF15). For more information see “[Exiting the Rule Definition Screen](#)” on page 119.

To implement newly defined or modified rules immediately, it is necessary to reload the Rule definitions using procedure CTTINIT. For more information, see CTTINIT procedure discussion in the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Administrator Guide*.

Rule parameters are described in detail in [Chapter 3, “Rule Parameters.”](#) They are described briefly in the following topics.



NOTE

The parameters marked with the symbol ^M can have many occurrences. Whenever you fill the last occurrence of the parameter on the screen, CONTROL-M/Tape adds a new empty occurrence of that parameter that you can fill in. The only limit to the number of occurrences is the region size available for the application.

General Rule Parameters

General rule parameters provide basic information about a rule.

Figure 21 General Parameters

+-----+-----+-----+-----+			
RULE NAME	JOB0099	GROUP PRODUCTION	MODE PROD (Prod/Test)
OWNER	M43	SEQUENCE PRIORITY 01	CONTINUE SEARCH Y (Y/N)
DESCRIPTION	SET VAULT	PATTERN OF JOB0099	VOLUMES
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOC	
=====			

Table 38 General Parameters

Parameter	Description
RULE NAME	Name of the rule.
GROUP	Group to which the rule is assigned.
MODE	CONTROL-M/Tape operation mode for this rule.
OWNER	User ID of user who created the rule.
SEQUENCE PRIORITY	Internal CONTROL-M/Tape rule scanning priority
CONTINUE SEARCH	Indicates whether to continue searching for additional rules if this rule meets the selection criteria.
DESCRIPTION	Description of the rule (free text).
DOCMEM	Name of the member in which rule documentation may reside.
DOCLIB	Name of the library in which rule documentation may reside.

Selection Parameters: ON^M Statement

Selection parameters specify selection criteria (ON statements) that must be fulfilled before CONTROL-M/Tape performs designated actions.



NOTE

A list of valid ON parameters can be alternately displayed or hidden on the screen by typing the command ONOPT (abbreviated O) in the COMMAND field and pressing **Enter**.

An ON statement is comprised of the ON field, and its corresponding parameters. The ON DATASET statement is required in each rule definition. If it is not specified, CONTROL-M/Tape automatically adds ON DATASET = * (an unqualified ON DATASET statement) as the last ON statement.

An unlimited number of ON statements can be specified in an ON block, using the And/Or/Not parameter described below.

Character masking (described on [page 62](#)) can be used in any of the specified criteria described in [Table 39 on page 106](#), except ON MEDIA and ON VOLSER (if a range is specified).

=====			
ON DATASET	= *		And/Or/Not A
ON ACCOUNT	= A001		And/Or/Not
=====			

The syntax of the ON statement is

ON *selection_criteria*

When the *selection_criteria* of a volume and data set is accessed, they trigger the rule.

To add a selection condition to a rule, type a valid ON parameter in the ON field and press **Enter**. To delete a specified selection condition, delete the ON parameter keyword and press **Enter**.

Valid selection criteria options and their abbreviations are:

Table 39 ON Parameter Options (part 1 of 2)

Option	Description
V (VOLSER)	Volume serial numbers or range of volume serial numbers. (If a range is specified, character masking is not supported.)
D (DATASET)	Data set specification.
J (JOBNAME)	Job names that created the data set.
A (ACCOUNT)	Job accounting information.
US (USERID)	Security user IDs assigned to the job that created the data set.
P (PGM)	Program that created the data set.
ME (MEDIA)	Media type (for example, cartridge, tape). Allowed values are specified in a table predefined by the user. Character masking is not supported.
MG (MGMTCLAS)	DFSMS Management Class (1 to 8 characters). Relevant only if the CONTROL-M/Tape to DFSMS interface is active. For more information, see “ CONTROL-M/Tape to DFSMS Interface ” on page 447 .

Table 39 ON Parameter Options (part 2 of 2)

Option	Description
UC (UCB)	Unit Control Block (UCB) device number or range of device numbers of the unit on which the data set is created.
<pre>===== ON DATASET = DS303K.INF And/Or/Not A ON ACCOUNT = A001 And/Or/Not O ON JOBNAME = RT* And/Or/Not =====</pre>	
And/Or/Not	Conjunctional parameter for linking ON statements. Specifying A (And), O (Or), or N (Not) opens a new ON statement and links the new statement to the line containing the A/O/N specification.

Action Parameters: D0 Statement

The CONTROL-M/Tape Action parameters (DO parameters) are used to specify processing instructions to be performed by the rule. The actions specified using the DO parameters are performed only after conditions specified in the ON block have been satisfied.

NOTE



A list of valid DO parameters can be alternately displayed or hidden on the screen by typing the command DOOPT (abbreviated DOO) in the COMMAND field and pressing **Enter**.

The DO parameter specifies an action to be taken. An unlimited number of DO parameters are permitted. The combination of DO parameters specified in the rule form a DO block.

It is possible to create a rule without specifying any Action parameters. One use for a rule without a DO block is for changing the CONTROL-M/Tape operation mode systematically, without performing other actions.

To specify Action parameters, type the parameter name next to the DO on the Rule Definition screen, and press **Enter**. Depending on the specified parameter, different subparameters are displayed on the screen.

NOTE



It is usually not necessary to enter the full parameter name; the shortest unique abbreviation or code letter of the command is sufficient.

DO^M Actions

The Action parameters are divided into the following categories:

Table 40 Action Parameter Categories

Category	Description
IOA-compatible	DO parameters that interface with, or are common to, the INCONTROL family of products. DO parameters in this category are DO SHOUT, DO RESOURCE, DO FORCEJOB, DO SET, and DO CONDITION.
Unique to CONTROL-M/Tape	All remaining DO parameters are unique to CONTROL-M/Tape.

The following are a description and example of each of the DO statement options:

DO ABENDRET – Specifies how long the data set should be retained if an abend or a system crash occurs while creating the data set (meaning, the data set is incomplete or unreliable). Only one DO ABENDRET statement can be specified per rule.

```
=====
DO ABENDRET = CYCLES          0010    PREFIX Y (Y/N)    And/Or  A
                  DATE          0101 YEAR 2000          And/Or  A
                  LAST ACCESS    0090                    And/Or
DO
=====
```

DO BYPASS – Indicates whether CONTROL-M/Tape should bypass tape management activities for the data set.

```
=====
DO BYPASS    = YES
DO
=====
```

DO CONDITION – Adds or deletes a prerequisite condition. Prerequisite conditions are used to trigger events in other INCONTROL products.

```
=====
DO CONDITION = TAPE-MOUNTED      ODAT +
                  AT  M (CHeck volumes /Mount /Open / CLoSe /Abend CloSe /Keep)
=====
```

DO DYNDNS – Indicates whether a data set should be dynamically added to the Media Database.

```
=====
DO DYNDNS      = YES
DO
=====
```

DO DYNVOL – Indicates whether a volume should be dynamically added to the Media Database.

```
=====
DO DYNVOL      = SPECIFIC REQUEST= Y      NON SPECIFIC REQUEST (SCRATCH)= E
DO
=====
```

DO FASTPOS – Indicates whether CONTROL-M/Tape should request Fast Positioning for a tape.

```
=====
DO FASTPOS     = YES
DO
=====
```

DO FORCEJOB – Force (schedule) a jobs under CONTROL-M.

```
=====
DO FORCEJOB    = TABLE  JOBCHECK      JOB PROD032      DATE  ODAT
                  LIBRARY CTM.PROD.SCHEDULE
                  AT   A  (CHeck volumes /Mount /Open / Close /Abend Close /Keep)
DO
=====
```

DO LABEL – Determines whether an external label is printed upon creation of the data set. Only one DO LABEL statement can be specified per rule.

```
=====
DO LABEL      = Y  (Y/N)
DO
=====
```

DO OVERJCL – Indicates whether MVS retention attributes for the data set should be overridden by CONTROL-M/Tape rules.

```
=====
DO OVERJCL    = YES
DO RETENTION  = DAYS      0030      And/Or
DO
=====
```

DO OWNER – Assigns an owner to a volume. Only one DO OWNER statement can be specified per rule.

```
=====
DO OWNER      = SUPV043
DO
=====
```

DO POOL – Indicates the pool from which scratch volumes should be taken. Only one DO POOL statement can be specified per rule.

```
=====
DO POOL       = ACCOUNTING
DO
=====
```

DO RECREATE – Indicates whether an existing data set should be overwritten by the data set.

```
=====
DO RECREATE   = YES
DO
=====
```

DO RESOURCE – Modifies the quantity of a Quantitative resource.

```
=====
DO RESOURCE   = TAPE1              0001 +
              AT  CL (CHeck volumes /Mount /Open / CClose /Abend CClose /Keep)
=====
```

DO RETENTION – Specifies how long the data set should be retained. Only one DO RETENTION statement can be specified per rule.

```
=====
DO RETENTION  = PERMANENT                                     And/Or
DO
=====
```

DO SET – Assigns a value to an IOA AutoEdit variable.

```
=====
DO SET        = %%TAPEOK=0
              MEMBER TAPESTAT LIBRARY  CTT.PROD.STATS
              AT   A (CHeck volumes /Mount /Open / CClose /Abend CClose /Keep)
=====
```

DO SHOUT – Issues a message (to a console, a TSO user ID, the IOA Log, ROSCOE user, or Info/Management).

```
=====
DO SHOUT      = TO TSO-MRE          URGENCY  U
MESSAGE      TAPE CLOSE DURING ABEND
              AT  A  (CHeck volumes /Mount /Open / CClose /Abend CClose /Keep)
=====
```

DO STACK – Enables or disables stacking of data sets on existing volumes. Only one DO STACK statement can be specified per rule.

```
=====
DO STACK      = N  (Y/N)   SCOPE VOL
DO
=====
```

DO STKDEFSZ – Indicates a default size to use for calculating stacking statistics for the data set.

```
=====
DO STKDEFSZ  = 0050  OVERRIDE STATISTICS YES
DO
=====
```

DO STKGROUP – Indicates a stacking group for the data set.

```
=====
DO STKGROUP  = STKGRP1
DO
=====
```

DO STKMODE – Indicates a method to be used for stacking the data set.

```
=====
DO STACK     = Y  (Y/N)
DO STKMODE   = ALL
DO
=====
```

DO STKMXLBL – Indicates a maximum number of data sets with which the data set can be stacked on a volume or group of volumes.

```
=====
DO STACK     = Y  (Y/N)
DO STKMXLBL  = 0005
DO
=====
```

DO STKMXVOL – Indicates the maximum number of volumes in a chain on which the data set can be stacked.

```
=====
DO STACK      = Y  (Y/N)
DO STKMXVOL   = 0002
DO
=====
```

DO STKRULE – Indicates a stacking limitation for the data set.

```
=====
DO STACK      = Y  (Y/N)
DO STKRULE    = NOT WITH JOB JOB1
                  DSN
DO STKRULE    = NOT WITH JOB
                  DSN DSN1
DO STKRULE    = NOT WITH JOB JOB2
                  DSN DSN2
DO
=====
```

DO STKSRCHL – Indicates a maximum number of volumes to consider for stacking the data set.

```
=====
DO STACK      = Y  (Y/N)
DO STKSRCHL   = 0300
DO
=====
```

DO VAULT – Identifies vault names and retention specifications for storing volumes.

```
=====
DO VAULT      = VAULTA                                BY BOX  (Y/N)
  UNTIL       DATE          0101 YEAR 2000              And/Or
  VAULT       =
=====
DO
```

Basic Scheduling Parameters

Basic Scheduling parameters specify on what dates the rule is a candidate for activation (meaning, load during initialization).

DAYS	DCAL
	AND/OR
WDAYS	WCAL
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y	
DATES	
CONFCAL	SHIFT

Table 41 Basic Scheduling Parameters

Parameter	Description
DAYS	Days of the month to activate the rule. A maximum of two lines can be specified.
WDAYS	Days of the week to activate the rule. A maximum of two lines can be specified.
MONTHS	Months to activate the rule.
DATES	Specific dates in the year to activate the rule.
CONFCAL	Name of a calendar used for rule activation confirmation.
SHIFT	Indicates if and when a rule should be activated when it fails confirmation by the CONFCAL calendar.

Editing Definitions in the Edit Environment

Definition parameters can be edited (moved, copied, deleted, or repeated) by performing INCONTROL Line Editing commands, similar to standard ISPF line commands, from within the IOA Edit environment.

The Edit environment of the Rule Definition screen is accessed by typing **EDIT** in the **COMMAND** field of a definition screen and pressing **Enter**.

Figure 22 Entering Editing Commands

RULE: DBBKP1 LIB CTT.PROD.RULES				TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+-----+-----+-----+-----+-----+					
__	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
__	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y (Y/N)	
__	DESCRIPTION				
__	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
__	ON DATASET	= BKP.DB*		And/Or/Not	
=====					
__	DO POOL	= DATABASE-BKP			
__	DO RETENTION	= DAYS	0060		And/Or
__	DO VAULT	= MAINLIB		BY BOX (Y/N)	
__	UNTIL	DAYS	0010		And/Or
__	VAULT	= VAULT2			
__	UNTIL	VAULT DAYS	0050		And/Or
__	VAULT	= VAULT3			
__	UNTIL	VAULT DAYS	0050		And/Or
D_	VAULT	= VAULT4			
__	UNTIL	VAULT DAYS	0050		And/Or
__	VAULT	= VAULT5			
__	UNTIL	VAULT DAYS	0050		And/Or
__	VAULT	=			
=====					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					10.03.47

A 2-character Line Editing command field, marked by underscores, is displayed for each line on the definition screen.

Editing commands are typed directly onto these underscores.

Specified Line Editing commands are processed when **Enter** is pressed.

For detailed information about and examples of editing definitions in the Edit environment, see Appendix A.

Commands of the Rule Definition Screen

The following commands can be specified in the COMMAND field of the Rule Definition screen:

Table 42 Commands of the Rule Definition Screen

Command	Description
EDIT	The EDIT command alternately activates or deactivates the Edit environment of the Rule Definition screen. The Edit environment provides ISPF-like line editing commands for this screen. For additional information, see Appendix A, “Editing Definitions in the Edit Environment”.
SCHED	The SCHED command alternately displays or hides scheduling parameters, independent of the value specified in the SHOW SCHEDULING CRITERIA field in the Rule Definition entry panel. For additional information, see “Display and Non-Display of Documentation” on page 116 .
DOC	The DOC command alternately displays or hides documentation lines, independent of the value specified in the SHOW RULE DOCUMENTATION field in the Rule Definition entry panel. For additional information, see “Rule Documentation” on page 116 .
DOOPT	The DOOPT command alternately displays or hides a list of valid DO action keywords.
ONOPT	The ONOPT command alternately displays or hides a list of valid ON selection criteria.

Display and Non-Display of Scheduling Criteria

Depending on the value of the SHOW SCHEDULING CRITERIA field in the entry panel, scheduling criteria are either displayed or hidden when you first enter the Rule Definition screen:

- If the SHOW SCHEDULING CRITERIA field is set to Y (Yes), scheduling criteria are displayed upon entry to the Rule Definition screen.

- If the SHOW SCHEDULING CRITERIA field is set to N (No), scheduling criteria are hidden upon entry to the Rule Definition screen.

Specifying the SCHED command (abbreviated SC) in the COMMAND field alternately displays or hides the rule's scheduling parameters (independent of the Show Scheduling Criteria field).

Below is an example of the Rule Definition screen with scheduling parameters hidden.

Figure 23 Rule Definition Screen with Scheduling Parameters Hidden

```
RULE: JOB0099 LIB CTT.PROD.RULES TABLE: ADM0002
COMMAND ==> SCROLL==> CRSR
+-----+-----+-----+-----+-----+-----+-----+-----+
RULE NAME   JOB0099    GROUP PRODUCTION          MODE PROD (Prod/Test)
OWNER       M43        SEQUENCE PRIORITY 01 CONTINUE SEARCH Y      (Y/N)
DESCRIPTION SET VAULT  PATTERN OF JOB0099 VOLUMES
DOCMEM      JOBDPCS    DOCLIB CTT.PROD.DOC
=====
ON DATASET  = *                               And/Or/Not
=====
DO VAULT     = VAULTA
UNTIL       DATE              0101 YEAR 1999           And/Or
VAULT       = VAULTB
UNTIL       DATE              0101 YEAR 2000           And/Or
VAULT       = MAINLIB
UNTIL       DATE              0101 YEAR 2001           And/Or
VAULT       = 
DO CONDITION = JOB0099_CHANGE_VAULT ODAT +
            AT CLOSE
DO
=====
=====

===== >>>>>>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<<<<<<< =====
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DooPT, ONOPT   15.49.41
```

If you are not using the scheduling options of CONTROL-M/Tape, you should work with N as the default.

Scheduling criteria apply to a rule even when they are hidden.

Rule Documentation

This item includes the following topics:

Display and Non-Display of Documentation

Depending on the value of the SHOW RULE DOCUMENTATION field in the entry panel, rule documentation (meaning, DOC lines) is either displayed or hidden when you first enter the Rule Definition screen.

- If the SHOW RULE DOCUMENTATION field is set to Y (Yes), rule documentation is displayed.
- If the SHOW RULE DOCUMENTATION field is set to N (No), rule documentation is hidden.

Specifying the DOC command in the COMMAND field alternately displays or hides the rule's documentation.

Figure 24 shows an example of the Rule Definition screen with documentation (DOC lines) displayed.

Figure 24 Rule Definition Screen with Documentation (DOC) Lines Displayed

RULE: JOB0099 LIB CTT.PROD.RULES			TABLE: ADM0002		
COMMAND ==>			SCROLL==> CRSR		
+-----+					
RULE NAME	JOB0099	GROUP PRODUCTION	MODE	PROD (Prod/Test)	
OWNER	M43	SEQUENCE PRIORITY 01	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	SET VAULT PATTERN OF JOB0099	VOLUMES			
DESCRIPTION					
DOCMEM	JOBDOCS	DOCLIB CTT.PROD.DOC			
=====					
DOC THIS SCREEN SHOWS WHERE THE DOCUMENTATION WILL APPEAR					
DOC WHEN YOU USE THE DOC COMMAND. AS YOU CAN SEE,					
DOC THE LINES FOLLOWING THE DOCUMENTATION WILL BE "PUSHED" DOWNWARD.					
DOC ENTER THE DOC COMMAND AGAIN TO MAKE THIS DOCUMENTATION DISAPPEAR.					
DOC					
=====					
ON DATASET	= *			And/Or/Not	
=====					
DO VAULT	= VAULTA				
UNTIL	DATE	0101 YEAR 1999		And/Or	
VAULT	= VAULTB				
UNTIL	DATE	0101 YEAR 2000		And/Or	
VAULT	= MAINLIB				
UNTIL	DATE	0101 YEAR 2001		And/Or	
FILL IN RULE DEFINITION. CMD5: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41



NOTE

Users with DOCU/TEXT installed at their site can specify a DOCU/TEXT library and member with up to 132 characters per line. However, if more than the first 71 characters in a line are used, the line is truncated and Browse Mode is forced. Browse mode is also forced if a line has an unprintable character.

Editing Documentation

Documentation can be edited when the DOC lines of the Rule Definition screen are displayed. Modify the DOC lines as desired. When you fill in the last DOC line and press **Enter**, a new DOC line is displayed.

Rule documentation is written to the member or library specified in the DOCMEM and DOCLIB fields on the Rule Definition screen. Therefore, it is also possible to edit the documentation directly using ISPF edit of the member. This is recommended for extensive documentation, or if complex editing is required.



NOTE

For CA-LIBRARIAN and CA-PANVALET users, the DOC command displays or hides rule documentation in Browse mode. Changes to the documentation are not permitted.

AutoSave and Saving Documentation

Documentation changes can be saved upon exiting the Rule Definition screen. A Save Documentation window can be displayed (if there are documentation changes) or not displayed, depending on the value of the AUTO-SAVE DOCUMENTATION field in the entry panel.

- If the AUTO-SAVE DOCUMENTATION field was set to Y (Yes), documentation changes are automatically saved and the Save Documentation window is not displayed.
- If the AUTO-SAVE DOCUMENTATION field was set to N (No), documentation changes are not automatically saved and the Save Documentation window is displayed. This window enables you to save or cancel the documentation changes.

Figure 25 Rule Definition Screen Save Documentation Window

RULE: JOB0099 LIB CTT.PROD.RULES		TABLE: ADM0002
COMMAN +-----+=====+=====+		==> CRSR
+-----+		-----+
RULE	SAVE DOCUMENTATION ==> Y (Y/N)	d/Test)
USER)
DESC	LIBRARY CTT.PROD.DOC	
DESC	MEMBER JOBDOCS	
DESC		
DOCM +-----+=====+		
=====		
DOC THIS SCREEN SHOWS WHERE THE DOCUMENTATION WILL APPEAR ON THE SCREEN		
DOC WHEN YOU USE THE DOC COMMAND. AS YOU CAN SEE,		
DOC THE LINES FOLLOWING THE DOCUMENTATION WILL BE "PUSHED" DOWNWARD.		
DOC ENTER THE DOC COMMAND AGAIN TO MAKE THIS DOCUMENTATION DISAPPEAR.		
DOC		
=====		
ON DATASET	= *	And/Or/Not
=====		
DO VAULT	= VAULTA	
UNTIL	DATE 0101 YEAR 1999	And/Or
VAULT	= VAULTB	
UNTIL	DATE 0101 YEAR 2000	And/Or
VAULT	= MAINLIB	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT 15.49.41		

You can change the name of the library or member name in the window.

- Enter Y (Yes) in the SAVE DOCUMENTATION field to save the changes.
- Enter N (No) in the SAVE DOCUMENTATION field to cancel the changes.

After you specify Y (Yes) or N (No) and press **Enter**, the Rule List screen is displayed.

Exiting the Rule Definition Facility

To exit the Rule Definition facility, the following screens must be exited in sequence:

Table 43 Exiting the Rule Definition Facility

Screen	Description
Rule Definition screen	How you exit this screen depends on whether changes made in the Rule Definition screen should be saved. Refer to “Exiting the Rule Definition screen” below.
Rule List screen	How you exit this screen depends on whether changes made to each rule should be saved. Refer to “Exiting the Rule List Screen” below.
Rule Table List screen	Exit this screen by pressing END (PF03/PF15).
Entry panel	Exit this screen by pressing END (PF03/PF15).

Exiting the Rule Definition Screen

Use the following commands to exit the Rule Definition screen:

Table 44 Commands for Exiting the Rule Definition Screen

Command	Description
END	Keep the changes made to the rule parameters and return to the Rule List screen. If documentation changes have been made, the Save Documentation window may be displayed. If Automatic Rule Sorting is enabled, the current rule is immediately moved to its appropriate position in the sorted list. For more information see “Exiting the Rule List Screen” on page 119 .
CANCEL	Do not keep the changes made to rule parameters and return to the Rule list screen. For more information see “Exiting the Rule List Screen” below.
NEXTRULE	Keep the changes made to rule parameters and display the Rule Definition screen of the next rule in the Rule list. (PF11/PF23).
PREVRULE	Keep the changes made to rule parameters and display the Rule Definition screen of the previous rule in the Rule list. (PF10/PF22).

NOTE



Changes made to parameters are initially only in memory. They are written to disk after you exit the Rule List screen.

Exiting the Rule List Screen

Press **(PF03/PF15)** END to exit the Rule List screen. If changes have been made in the Rule Definition screen and the Rule Definition screen was exited with **(PF03/PF15)** END, or if the Rule list was resorted, an Exit Option window is opened. Two exit options SAVE and CREATE are displayed.

Figure 26 Rule List Screen Exit Option Window

```
RULES OF LIBRARY: CTT.PROD.RULES                                TABLE: AAEDTST1  
COMMAN +-----+ ==> CRSR  
OPT N |           PLEASE SELECT EXIT OPTION           |  
A |                                                    |  
J |      SAVE      CREATE                             |  
J |                                                    |  
J |      LIBRARY   CTT.PROD.RULES                     |  
M |      TABLE    JOB00012                           |  
M |                                                    |  
M +-----+  
M          MOUNT CHECK - FORCE CERTAIN CONTROL-M JOBS  
SHOUTSCR SHOUT ON SCRATCH OF CERTAIN JCL ACCOUNTS  
===== >>>>>>>>>>>>>>>> NO MORE RULES IN THIS TABLE <<<<<<<<<<<<<<<<<< =====
```

OPTIONS: S SELECT D DELETE I INSERT

14.24.41

You can change the name of the library or the name of the rule in the window.

To save changes to all modified rules and return to the Rule Table List screen, enter Y (Yes) in the SAVE field if the table name exists in the specified library, or enter Y (Yes) in the CREATE field to create a new table name in the specified library.

To cancel the changes to all modified rules and return to the Rule Table List screen, enter N (No) in one of the exit options.

Press **RESET (PF04/PF16)** in the Exit Option window to cancel the exit operation and remain in the Rule List screen.

To save changes made to parameters in the rule table, the entire table must be saved by entering Y in one of the exit options of the Rule Table List screen.

Pool Definition Facility

CONTROL-M/Tape Online Pool Definition screens enable you to view, create and modify pool definitions.

Pools are logical groups to which media are assigned (for example, a pool can be defined for each department in your organization). Pools can help in the accounting of media per department, in departmental security, and in managing multi-platform media. Pools can be particularly useful for allocating and budgeting removable media by department. Scratch volumes are generally allocated on a pool basis. CONTROL-M/Tape tracks the number of scratch volumes per pool so that a scratch volume is always available when needed.

Pool definitions are stored in libraries (partitioned data sets). A library contains pool tables (members), and each table contains specifications for one or more pool definitions. Most sites designate a primary pool definition library (the default is member \$\$POOL in the PARM library).

Accessing the Pool Definition Facility

The Pool Definition facility contains the following screens:

Table 45 Pool Definition Facility Screens

Screen	Description
Pool Definition Facility entry panel	Allows specification of parameters that determine which screen is displayed.
Table List screen	Displays the list of tables (members) in the specified Pool library.
Pool List screen	Displays the list of pools in the selected table.
Pool Definition screen	Displays the parameters of the selected pool definition. This is the main screen of the facility.

To enter the Online Pool Definition facility, select option TP in the IOA Primary Option menu. The entry panel is displayed.

Creating Tables

Tables can be created in any of the following ways:

- By specifying the new table name in the entry panel and pressing **Enter**.
- By using the SELECT command (described later) to specify the new table name in the Table List screen and pressing **Enter**.

As a result of using either of the above methods, a skeletal pool definition (meaning, one with most fields left blank) is displayed in the pool definition screen.

Fill in the blanks and save the screen entries. The table is created and the pool definition is the first and only definition in the Pool list of the table. As additional pool definitions are created in the table (described below), they are added to the list.

NOTE



Upon exiting the Pool List screen, if changes were made in at least one pool definition, an Exit Option window is displayed. One field of the window displays the table name. This value can be changed to a new table name that creates a new table in which the pool definitions are saved.

Creating Pool Definitions

Pool definitions can be created using either of two basic methods:

- A skeletal pool definition can be created by specifying the name of a new pool definition in the entry panel. (The table specified in the entry panel can be either a new or an existing table.) In this case, virtually all fields of the pool definition are empty.
- A copy of an existing pool definition can be created using the INSERT option (described later) in the Pool List screen. In this case, most fields of the new pool definition have the same values as the fields in the copied pool definition.

Performing Operations on Tables and Pools

Many operations can be performed on tables and on the pool definitions in them. These operations are performed using commands and options in the various screens of the Pool Definition facility.

Following is a brief summary of some of the major operations possible within the facility. Additional options and commands are explained following the summary.

Accessing (Editing or Browsing) a Table and its Pools

A table (meaning, the pool definitions in the table) can be browsed or edited.

When browsed, the table cannot be modified or updated. When the table is edited, new pool definitions can be added and existing pool definitions can be modified or deleted.

Browsing, however, has advantages:

- Access and exit are quicker than in editing.
- A pool list and rule definitions that are in use by another user can be viewed.
- Access for browsing might be granted, even though access for editing might be denied due to site security requirements.

To browse a table (and its pool list and pool definitions), use the BROWSE option in the Table List screen.

Specifying the table name in the entry panel, or using the SELECT option in the Table List screen, provides edit access.

Depending on user profile definitions, if the table requested for editing is in use, access is either granted in Browse mode, or access will not be granted.

Copying a Pool to Another Table

Pools can be copied from one table to another using the COPY option in the Pool List screen. For more information, see “Copying Pools to Another Table” below.

Deleting a Table or a Pool

Unneeded rules can be deleted using the DELETE option in the Pool List screen. For more information, see “Options of the Pool List Screen.” Unneeded tables can be deleted using the DELETE option in the Table List screen. For more information, see “Deleting Tables” below.

Saving Modifications

All changes made to a table and its pool definitions are kept in memory until the table is exited. Upon exiting the table, the user can choose to save or cancel the changes. For more information, see “[Exiting the Pool List Screen](#)” on page 134.

Pool Definition Entry Panel

Figure 27 Pool Definition Entry Panel

----- CONTROL-M/Tape POOL DEFINITION ENTRY PANEL -----(TP)

COMMAND ==>

SPECIFY LIBRARY, TABLE NAME, POOL NAME

LIBRARY ==> CTPP.PROD.PARM

TABLE ==> (Blank for table selection list)

POOL ==> (Blank for pool selection list)

USE THE COMMAND "SHPF" TO SEE PFK ASSIGNMENT

14.34.11

NOTE



If you use the selection list fields, their values are not erased until you exit the entry panel by pressing **END (PF03/PF15)**.

To open the desired display

Fill in entry panel fields LIBRARY, TABLE, and POOL as described below to open the desired display.

To display the list of tables in a library

- 1 Type the library name.
- 2 Either leave the table name blank, or type part of a table name together with mask characters (* and ?).
- 3 Press **Enter**.

To display the list of rules of a specific pool

- 1 Type the library name.
- 2 Type the table name.
- 3 Press **Enter**.

If the table does not exist, the screen for defining a new pool in the table is displayed.

To display the details of a specific pool (Pool Definition screen)

- 1 Type the library name.
- 2 Type the table name.
- 3 Type the pool name.
- 4 Press **Enter**.

If the table does not exist, or if the pool for the specified table does not exist, the screen for defining a new pool in the table is displayed.

NOTE



If you enter the screen for defining a new pool and want to leave the screen without defining a pool, use the CANCEL command.

Pool Table List Screen

The Pool Table List screen displays a list of pool tables (members) in the specified library. This screen can be entered directly from the entry panel or upon exiting from the Pool List screen.

By default, only table names are listed in the screen. However, if the default has been modified at time of installation, statistical information is displayed for each table name, as shown in [Figure 28](#).

Figure 28 Rule Definition Facility Table List Screen

```
TABLES OF LIBRARY CTT.PROD.PARM                                -----(TP)
COMMAND ==>                                                    SCROLL==> CRSR
OPT NAME ----- VV.MM   CREATED      CHANGED          SIZE INIT MOD ID
$$$POOL           01.01 00/03/03 00/03/03 09:11     41    41    0 M43A
$$$VAULT          01.01 00/03/03 00/03/03 11:11     70    70    0 M43A
===== >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<< =====
```

```
OPTIONS: S SELECT B BROWSE D DELETE                               14.43.14
```

To scroll down the Pool Table list, press **PF08/PF20**. To scroll up the Pool Table list, press **PF07/PF19**.

To return to the entry panel, press END (PF03/PF15).

Options of the Pool Table List Screen

To select one of the following options, specify the option in the OPT field to the left of the pool table name, and press **Enter**:

Table 46 Options of the Table List Screen

Option	Description
S (SELECT)	<p>Display the list of pools in the pool table for any purpose. Only one pool table can be selected at a time.</p> <p>Note: If the S (Select) option is specified in the Pool Table List screen for a table that is currently in use (selected) by another user, then depending on User profile parameter SSCHBRO, either the Pool List screen is not displayed (meaning, the Pool Table List screen remains displayed; this is the default), or the Pool List screen is displayed in Browse mode. In either case, an appropriate message is displayed.</p>
B (BROWSE)	Display the list of pools in the pool table for browsing. Only one pool table can be selected at a time.
D (DELETE)	Delete the table (member) from the library. Multiple tables can be selected. A confirmation window is displayed. For more information see “Deleting Pool Tables” below.



NOTE

The INCONTROL administrator can limit specific users to access of only the BROWSE option.

Deleting Pool Tables

To delete pool tables, specify option D by the pool table names and press **Enter**.

The following confirmation window is displayed, in sequence, for each pool table selected for deletion:

Figure 29 Pool Definition Facility Delete Table Confirmation Window

[illegible]

Specify Y (Yes) in the window to confirm the delete request.

Specify N (No) in the window to cancel the delete request.



NOTE

If PDSMAN is operational at your site, \$\$\$SPACE members cannot be deleted.

A message is written to the IOA Log for each pool table deleted.

Pool List Screen

This screen displays the List of pools in a pool table in a specified library. This screen can be entered directly from the entry panel or the Pool Table List screen, or upon exiting from the Pool Definition screen.



NOTE

If the S (Select) option is specified in the Pool Table List screen for a table that is currently in use (selected) by another user, then depending on User profile parameter SSCHBRO, either the Pool List screen is not displayed (meaning, the Pool Table List screen remains displayed; this is the default), or the Pool List screen is displayed in Browse mode. In either case, an appropriate message is displayed.

Figure 30 Pool Definition Rule List Screen

```

POOLS OF LIBRARY: CTT.PROD.PARM                                TABLE: $$POOL
COMMAND ==>                                                    SCROLL==> CRSR
OPT  POOL ----- DESCRIPTION -----
ACCT      ACCOUNTING DEPARTMENT TAPES
ADMIN1    ADMINISTRATIVE TAPES FOR PERSONNEL
ADMIN2    ADMINISTRATIVE TAPES FOR PAYROLL
BACKUP1   DAILY BACKUP TAPE
BACKUP2   MONTHLY BACKUP TAPE
MANAGERS  MANAGERS SCHEDULES TAPES
MARKETING MARKETING DEPARTMENT TAPES
MIS1      TAPES BELONGING TO MIS DEPARTMENT PROGRAMMERS
MIS2      TAPES BELONGING TO MIS DEPARTMENT CONSULTANTS
MIS3      TAPES BELONGING TO MIS DEPARTMENT ANALYSTS
PERSONEL  TAPES FOR PERSONNEL DEPARTMENT
QUALCONT  QUALITY CONTROL TAPE
SECRETARIES TAPES CONTAINING FILES USED BY SECRETARIES
===== >>>>>>>>>>>>>>>> NO MORE POOLS IN THIS TABLE <<<<<<<<<<<<<<<< =====

OPTIONS:  S SELECT      D DELETE      I INSERT

12.48.43

```

Standard scrolling conventions are supported in this screen.

To exit to the Pool List screen, press END (**PF03/PF15**). For more information see “Exiting the Pool List Screen” on page 134.

Format of the Pool List Screen

Next to each pool name in the Pool list, certain information can be displayed. The type and format of this information depends on whether the screen is displayed in DESC format or in STAT format.

- In DESC format, the pool's description, taken from the DESC field of the pool definition, is displayed. Default.
- In STAT format, the pool's ISPF statistical information is displayed.

By default, the pool list is displayed in DESC format. To change formats, use the DESC or STAT commands, as described below.

Commands of the Pool List Screen

The following commands can be specified in the COMMAND field of the Pool List screen:

Table 47 Commands of the Pool List Screen

Command	Description
DESC	Command DESC displays the pool description next to the pool name. The description is taken from the DESC field in the pool definition.
STAT	Command STAT displays the following ISPF-like statistical information about the pool next to the pool name: version and modification numbers, creation date, last modification date, and user ID.

Options of the Pool List Screen

Specify one of the following pool processing options by marking the option to the left of the pool name and pressing **Enter**:

NOTE



If the Pool List screen is displayed in Browse mode, options D (Delete) and I (Insert) are not available.

Table 48 Options of the Pool List Screen

Command	Description
S (SELECT)	Display the Pool Definition screen with details of the specific pool. If the Pool List screen is not displayed in Browse mode, the pool definition can be edited and updated. If the Pool List screen is displayed in Browse mode, the pool definition can only be browsed; it cannot be modified.
D (DELETE)	Delete a pool from the Pool list.
I (INSERT)	Insert a new pool in the list. The Pool Definition screen appears with the same details of the pool marked "I", but the POOL NAME and DESCRIPTION parameters are empty for you to fill in. The new pool is added after the pool marked "I".
C (COPY)	Copy the pool to another table. Multiple pools can be selected.

Pool Definition Screen

The Pool Definition screen is used to define, display and modify pool parameters. Pool parameters specify logical groups of volumes. This screen can be entered directly from the entry panel or from the Pool List screen. Update of parameters is not permitted in Browse mode.

The pool parameters may fill more than one screen.

Figure 31 Pool Definition Screen

```
----- POOL BACKUP1                                TABLE $$POOL -----(TP.S)
COMMAND ==>                                         SCROLL==> CRSR
+-----+
      POOL NAME  BACKUP1                                OWNER  DP1
      DESCRIPTION BACKUP POOL FOR DIVISION ONE
      DESCRIPTION
=====
      VOLUMES    FROM BKP1*      TO
                  FROM CA0001    TO CA1000
                  FROM TP1000    TO TP1545
                  FROM TP2000    TO TP2545
                  FROM           TO
===== >>>>>>>>>>>>>>>> END OF POOL DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====

      FILL IN POOL DEFINITION. CMDS: EDIT, SHPF                                         12.58.05
```

The pool parameters are divided into the following basic groups:

- General Pool parameters
- Volume Range list

The groups are separated by a delimiter line.

To delete a parameter on the screen, simply erase it (press the EOF key, or blank it out). If additional operations are required, CONTROL-M/Tape issues appropriate instructions.

The Pool Definition screen can also be edited using ISPF-like editing commands (such as copy, move, repeat, after, before) in the CONTROL-M/Tape Edit environment. For additional information, see [Appendix A, “Editing Rule Definitions in the IOA Edit Environment”](#).

Pool definitions are automatically saved in a PDS member (a Pool table) that can be edited using a standard editor such as the ISPF Edit facility. Pools originally defined using a standard editor can also be displayed and edited in the Online Pool Definition screen. The pool table name is defined at time of installation (Default: \$\$POOL).

The Pool Definition screen can be exited in various ways. The most common is to press END (**PF03/PF15**). For more information, see “[Exiting the Pool Definition Facility](#)” on page 133.

To immediately implement newly defined or modified Pool definitions, reload them through procedure CTTINIT. For more information, see “Procedure CTTINIT” in the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Administrator Guide*.

NOTE



The parameters marked with the symbol ^M can have many occurrences. Whenever you fill the last occurrence of the parameter on the screen, CONTROL-M/Tape adds a new empty occurrence of that parameter that you can fill in. The only limit to the number of occurrences is the region size available for the application.

General Pool Parameters

General Pool parameters provide basic information about a pool.

Table 49 General Parameters

Parameter	Description
POOL NAME ^M	Name of the pool (a maximum of 15 characters can be specified).
OWNER	User ID of the user who defined the pool.
DESCRIPTION	Description of the pool (free text).

POOL NAME	BACKUP1	OWNER	DP1
DESCRIPTION	BACKUP POOL FOR DIVISION ONE		
DESCRIPTION			

Volume Range List

The Volume Range list specifies the volumes that are allocated to the pool.

Table 50 Volume Range List

Parameter	Description
VOLUMES	List of volume ranges associated with the pool. Each volume range must be listed on a separate line.
FROM/TO ^M	Starting and ending volume serial numbers for each volume range. Multiple volume ranges can be specified. Character masking can be used in FROM fields. When a mask is specified, the corresponding TO field must be blank. For more information, see “Character Masking” on page 62 .

VOLUMES	FROM	BKP1*	TO	
	FROM	CA0001	TO	CA1000
	FROM	TP1000	TO	TP1545
	FROM	TP2000	TO	TP2545
	FROM		TO	

Commands of the Pool Definition Screen

EDIT Command

The EDIT command alternately activates or deactivates the Edit environment of the Pool Definition screen. The Edit environment provides ISPF-like line editing commands for this screen. For additional information, see Appendix A, “Editing in the Edit Environment.”

Exiting the Pool Definition Facility

To exit the Pool Definition facility, the following screens must be exited in sequence:

Table 51 Pool Definition Facility Exit Screens

Screen	Description
Pool Definition screen	How you exit this screen depends on whether changes made in the Pool Definition screen should be saved. Refer to “Exiting the Pool Definition screen” below.
Pool List screen	How you exit this screen depends on whether changes made to each pool should be saved. Refer to “Exiting the Pool List Screen” below.
Pool Table List screen	Press END (PF03/PF15) to exit this screen.
Entry panel	Press END (PF03/PF15) to exit this screen.

Exiting the Pool Definition Screen

Use the following commands to exit the Pool Definition screen:

Table 52 Pool Definition Exit Screen

Command	Description
END	Keep the changes made to the parameters of the pool and return to the Pool list. For more information, see “Exiting the Pool List Screen” below.
CANCEL	Do not keep the changes made to the parameters of the pool and return to the Pool list. For more information, see “Exiting the Pool List Screen” below.
NEXTPOOL	Keep the changes made to the parameters of the pool and display the next pool in the Pool list. (PF11/PF23).
PREVPOOL	Keep the changes made to the parameters of the pool and display the previous pool in the Pool list. (PF10/PF22).

NOTE



Changes made to parameters are initially kept only kept in memory. They are written to disk after you exit the Pool List screen.

Exiting the Pool List Screen

Press **(PF03/PF15)** END to exit the Pool List screen. If changes have been made in the Pool Definition screen and the Pool Definition screen was exited with **(PF03/PF15)** END, an Exit Option window is opened.

It is possible to change the name of the library or the name of the pool in the window.

Figure 32 Pool List Screen Exit Option Window

[illegible]

- To save the changes to all modified pools and return to the Pool Table List screen, enter **Y** (Yes) in the **SAVE** field if the table name exists in the specified library, or enter **Y** (Yes) in the **CREATE** field to create a new table name in the specified library.
- To cancel the changes to all modified pools and return to the Pool Table List screen, enter **N** (No) in one of the exit options.
- Press **RESET (PF04/PF16)** in the Exit Option window to cancel the exit operation, and remain in the Pool List screen.
- To save changes made to pool parameters in the pool table, the entire table must be saved by entering **Y** in one of the exit options of the Pool List screen.

Copying Pool Definitions to Another Table

To copy one or more pool definitions from the current table to another table, specify option C (Copy) by the pool names in the Pool List screen and press **Enter**. The following window is displayed:

Figure 33 Pool List Screen Copy Window

```

POOLS OF LIBRARY CTT.PROD.PARM                                POOL: PLRPT010
COMMAND ==>                                                    SCROLL==> CRSR
OPT  NAME -----
  C   POOL1                      SCRATCH POOL1
      POOL2                      SCRATCH POOL2

+-----+
|          SPECIFY DESTINATION LIBRARY, TABLE AND RULE NAME          |
|                                                                       |
|  LIBRARY :   CTT.PROD.POOLS                                         |
|  TABLE  :                                           POOL1         |
|  POOL    :                                           POOL1         |
|                                                                       |
|  PRESS END/RESET TO CANCEL      ENTER TO PERFORM THE COPY         |
+-----+

OPTIONS:  S SELECT   D DELETE   I INSERT                                12.48.45
  
```

The window contains the following fields (some fields contain default values that can be modified):

Table 53 Fields of the Pool List Screen Copy Window

Field	Description
LIBRARY	Library containing the table into which the pool definitions should be copied. Must be an existing library. Default is the current library.
TABLE	Name of the table into which the pool should be copied. NOTE: A table can only be copied to another table. It cannot be copied to its own table (even if the pool is renamed). If the specified table does not exist, the table is created when the request is performed.
POOL	Name of the pool definition to be copied. If multiple pool definitions are selected, the window is first displayed with the first selected pool definition. As each request is performed or canceled, the next requested pool definition name appears.

To perform a request, press **Enter**.

To cancel a request, press END (**PF03/PF15**) or RESET (**PF04/PF16**).

Vault Definition Facility

CONTROL-M/Tape Vault Definition screens enable you to view, create, and modify vault definitions.

Vaults are locations in which removable media can be stored as an alternative to the active library. A vault definition defines the vault name, location, and optionally the capacity of the vault.

Vault definitions are stored in libraries (partitioned data sets). A library contains vault tables (members), and each table contains specifications for one or more vault definitions. Most sites designate a primary vault definition library (the default is \$\$VAULT in the PARM library), but the number of vault definition libraries that you can use is unlimited.

Vault definitions are also stored in the CONTROL-M/Tape Media Database. Modifications to existing Vault Definitions are only incorporated after a run of vault management utility CTTVTM. For more information about utility CTTVTM, see the INCONTROL for z/OS Utilities Guide.

Accessing the Vault Definition Facility

The Vault Definition facility contains the following screens:

Table 54 Vault Definition Facility Screens

Screen	Description
Vault Definition Facility entry panel	Allows specification of parameters that determine which screen is displayed.
Table List screen	Displays the list of tables (members) in the specified Vault library.
Vault List screen	Displays the list of vaults in the selected table.
Vault Definition screen	Displays the parameters of the selected vault definition. This is the main screen of the facility.

To enter the Online Vault Definition facility, select option TV in the IOA Primary Option menu. The entry panel is displayed.

Creating Tables

Tables can be created in any of the following ways:

- By specifying the new table name in the entry panel and pressing **Enter**.
- By using the SELECT command (described later) to specify the new table name in the Table List screen and pressing **Enter**.

As a result of using either of the above methods, a skeletal vault definition (meaning, one with most fields left blank) is displayed in the vault definition screen.

Fill in the blanks and save the screen entries. The table is created and the vault definition is the first and only definition in the Vault list of the table. As additional vault definitions are created in the table (described below), they are added to the list.



NOTE

Upon exiting the Vault List screen, if changes were made in at least one vault definition, an Exit Option window is displayed. One field of the window displays the table name. This value can be changed to a new table name that creates a new table in which the vault definitions are saved.

Creating Vault Definitions

Vault definitions can be created using either of two basic methods:

- A skeletal vault definition can be created by specifying the name of a new vault definition in the entry panel. (The table specified in the entry panel can be either a new or an existing table.) In this case, virtually all fields of the vault definition are empty.
- A copy of an existing vault definition can be created using the INSERT option (described later) in the Pool List screen. In this case, most fields of the new vault definition have the same values as the fields in the copied vault definition.

Performing Operations on Tables and Vaults

Many operations can be performed on tables and on the vault definitions they contain. These operations are performed using commands and options in the various screens of the Vault Definition facility.

Below is a brief summary of some of the major operations possible within the facility. Additional options and commands are explained following the summary.

Accessing (Editing or Browsing) a Table and its Vaults

A table (meaning, the vault definitions in the table) can be browsed or edited.

When browsed, the table cannot be modified or updated. When the table is edited, new vault definitions can be added and existing vault definitions can be modified or deleted.

Browsing, however, has advantages:

- Access and exit are quicker than in editing.
- A vault list and vault definitions that are in use by another user can be viewed.
- Access for browsing might be granted, even though access for editing might be denied due to site security requirements.

To browse a table (and its vault list and vault definitions), use the BROWSE option in the Table List screen.

Specifying the table name in the entry panel or using the SELECT option in the Table List screen provides edit access.

Depending on user profile definitions, if the table requested for editing is in use, access is either granted in Browse mode, or access will not be granted.

Copying a Vault to Another Table

Vaults can be copied from one table to another using the COPY option in the Vault List screen. For more information, see “Copying Vaults to Another Table” below.

Deleting a Table or a Vault

Unneeded vaults can be deleted using the DELETE option in the Vault List screen. For more information, see “Options of the Vault List Screen.” Unneeded tables can be deleted using the DELETE option in the Vault List screen. For more information, see “Deleting Tables” below.

Saving Modifications

All changes made to a table and its vault definitions are kept in memory until the table is exited. Upon exiting the table, the user can choose to save or cancel the changes. For more information, see “[Exiting the Vault Definition Screen](#)” on page 152.

Vault Definition Entry Panel

Figure 34 Vault Definition Entry Panel

```

----- CONTROL-M/Tape VAULT DEFINITION ENTRY PANEL -----(TV)
COMMAND ==>

SPECIFY LIBRARY, TABLE NAME, VAULT NAME

LIBRARY  ==> CTT.PROD.PARM
TABLE    ==>                                     (Blank for table selection list)
VAULT    ==>                                     (Blank for vault selection list)

SHOW VAULT DOCUMENTATION ==> N      (Y/N)
AUTO-SAVE DOCUMENTATION ==> N      (Y/N)

USE THE COMMAND "SHPF" TO SEE PFK ASSIGNMENT                                     11.51.11

```

NOTE



If you use the selection list fields, their values are not erased until you exit the entry panel by pressing **END (PF03/PF15)**.

Fill in entry panel fields **LIBRARY**, **TABLE**, and **VAULT** as described below to open the desired display:

- Type Y or N in the **SHOW VAULT DONENTATION** field to determine whether vault documentation lines are displayed when the vault is displayed. For more information, see [“Vault Documentation” on page 149](#).
- Type Y or N in the **AUTO-SAVE DOCUMENTATION** field to determine whether changes made to documentation are automatically saved (meaning, without special prompting) when updating the rule. For more information, see [“Rule Documentation” on page 116](#).
- To display the list of tables in a library, do the following:
 1. Type the library name.
 2. Either leave the table name blank, or type part of a table name together with mask characters (* and ?).

3. Press **Enter**.

- To display the list of vaults of a specific rule, do the following:

1. Type the library name.

2. Type the table name.

3. Press **Enter**.

If the table does not exist, the screen for defining a new vault in the table is displayed.

- To display the details of a specific vault (Vault Definition screen), do the following:

1. Type the library name.

2. Type the table name.

3. Type the vault name.

4. Press **Enter**.

If the table does not exist, or the vault for the specified table does not exist, the screen for defining a new vault in the table is displayed.

NOTE



If you enter the screen for defining a new rule and want to leave the screen without defining a rule, use the CANCEL command.

Vault Table List Screen

The Vault Table List screen displays a list of vault tables (members) in the specified library. You can enter this screen through the entry panel or when exiting the Vault List screen.

By default, only vault table names are listed in the screen. However, if the default has been modified at time of installation, statistical information is displayed with the vault table name, as shown in [Figure 142](#).

```

TABLES OF LIBRARY CTT.PROD.PARM                                -----(TV)
COMMAND ==>                                                    SCROLL==> CRSR
OPT  NAME -----VV.MM  CREATED      CHANGED      SIZE  INIT  MOD   ID
    $$POOL      01.09 00/05/24 00/06/09 11:48   198   25    0 M09
    $$VAULT      01.05 00/06/08 00/06/13 15:39   864   40    0 M17A
===== >>>>>>>>>>>>>>>> NO MORE TABLES IN THIS LIBRARY <<<<<<<<<<<<<<<< =====

```

To return to the entry panel, press **END (PF03/PF15)**.

To request one of the following options, specify the option in the OPT field to the left of the vault table name, and press **Enter**:

Option	Description
S (SELECT)	<p>Display the list of vaults in the vault table for any purpose, including editing and modification. Only one vault table can be selected at a time.</p> <p>Note: If the S (Select) option is specified in the Vault Table list screen for a vault that is currently in use (selected) by another user, then depending on User profile definition, either the Vault List screen is not displayed (meaning, the Vault Table List screen remains displayed; this is the default), or the Vault List screen is displayed in Browse mode. In either case, an appropriate message is displayed.</p>

Table 55 Options of the Table List Screen (part 2 of 2)

Option	Description
B (BROWSE)	Display the list of vaults in a vault table for browsing. Only one vault table can be selected at a time.
D (DELETE)	Delete the vault table (member) from the library. Multiple vault tables can be selected. A confirmation window is displayed. For more information, see “Deleting Vault Tables” below.



NOTE

The INCONTROL administrator can limit specific users to access only the BROWSE option.

Deleting Vault Tables

To delete vault tables, specify **D** to the left of the vault table names and press **Enter**.

The following confirmation window is displayed, in sequence, for each vault table selected for deletion:

Figure 36 Vault Definition Facility Delete Table Confirmation Window

```

TABLES OF LIBRARY CTT.PROD.PARM                                -----(TV)
COMMAND ==>                                                    SCROLL==> CRSR
OPT  NAME ---+-----+ E  INIT  MOD  ID
      $$POOL  | CONFIRM DELETE OPTION |      0 M09
      D  $$VAULT  <-----|              (Y/N)              |      0 M17A
===== >>>>>>>>>>>>>>>> NO +-----+ <<<<<<<<<<<<<<<< ====

```

- Specify **Y (Yes)** in the confirmation window to confirm the delete request.
- Specify **N (No)** to cancel the delete request.



A message is written to the IOA Log file for each vault table that is deleted.

Vault List Screen

The screen displays the list of vaults in a specified table. This screen can be entered directly from the entry panel or the Vault Table List screen, or upon exiting from the Vault Definition screen.

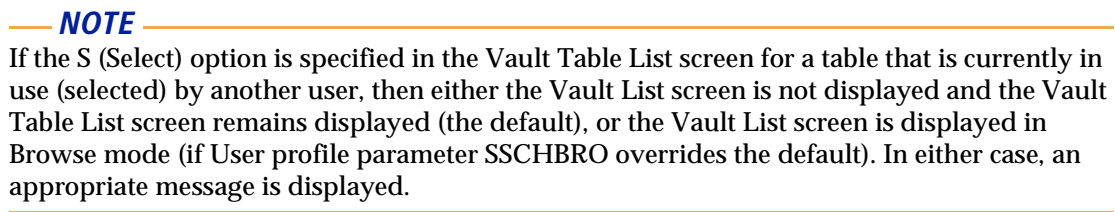


Figure 37 Vault Definition Rule List Screen

```

VAULTS OF LIBRARY CTT.PROD.PARM                                TABLE: $$VAULT
COMMAND ==>                                                    SCROLL==> CRSR
OPT  VAULT ----- DESCRIPTION -----
      VAULT_01    FOR DIVISION 1 MEDIA.
      VAULT_02    FOR DIVISION 2 MEDIA.
      VAULT_03    FOR DIVISION 3 MEDIA.
      VAULT_04    FOR DIVISION 4 MEDIA.
===== >>>>>>>>>>>>>>>> NO MORE VAULTS IN THIS TABLE <<<<<<<<<<<<<<<< =====

OPTIONS:  S SELECT      D DELETE      I INSERT      C COPY
15.26.04

```

Standard scrolling conventions are supported on the Vault List.

To exit to the Vault List screen, press END (**PF03/PF15**). For more information, see [“Exiting the Vault List Screen” on page 152](#).

Format of the Vault List Screen

Next to each vault name in the Vault list, certain information can be displayed. The type and format of this information depends on whether the screen is displayed in DESC format or in STAT format.

In DESC format, the vault’s description, taken from the DESC field of the vault definition, is displayed. Default.

In STAT format, the ISPF-like statistical information about the vault is displayed.

By default, the vault list is displayed in DESC format. To change formats, use the DESC or STAT commands, as described below.

Commands of the Vault List Screen

The following commands can be specified in the COMMAND field of the Vault List screen:

Table 56 **Commands of the Vault List Screen**

Command	Description
DESC	Command DESC displays the vault description next to the vault name. The description is taken from the DESC field in the vault definition.
STAT	Command STAT displays the following ISPF-like statistical information about the vault next to the vault name: version and modification numbers, creation date, last modification date, and user ID.

Options of the Vault List Screen

Specify one of the following vault processing options by marking the option to the left of the vault name and pressing **Enter**:

NOTE



If the Vault List screen is displayed in Browse mode, options D (Delete) and I (Insert) are not available.

Table 57 Options of the Vault List Screen

Option	Description
S (SELECT)	Display the Vault Definition screen, with details of the specific vault. If the Vault List screen is not displayed in Browse mode, the vault definition can be edited and updated. If the Vault List screen is displayed in Browse mode, the vault definition can be browsed, but it cannot be modified.
D (DELETE)	Delete a vault from the Vault list.
I (INSERT)	Insert a new vault in the list. The Vault Definition screen appears, with the same details of the vault marked "I", but the VAULT NAME and DESCRIPTION parameters are empty for you to fill in. The new vault is added after the vault marked "I".
C (COPY)	Copy the vault to another table. Multiple vaults can be selected.

Vault Definition Screen

The Vault Definition screen is used to define, display, and modify parameters of a vault. This screen can be entered directly from the entry panel or from the Vault List screen. Update of parameters is not permitted in Browse mode.

The vault parameters can take up more than one screen.

Figure 38 Vault Definition Screen

VAULT MAINLIB LIB CTT.PROD.VAULTS				TABLE: \$\$VAULT			
COMMAND ==>				SCROLL==> CRSR			
+-----+							
VAULT NAME		MAINLIB					
LOCAL		Y					
=====							
DESC		BACK UP SITE					
DESC							
OWNER		NMZ					
ADDRESS		1234 MAIN STREET					
ADDRESS							
PHONE		609-555-2684					
SCHEDULE		DAILY PROCESSING					
SCHEDULE							
DOCMEM		CTTDOCS		DOCLIB		CTT.PROD.DOC	
===== GLOBAL CAPACITY =====							
CAPACITY		00003000	TYPE	SLOT	MEDIA	CART	
		00000100	TYPE	BOX	MEDIA	TAPE	BOX ID BXA BOX SIZE 000020
		00000045	TYPE	BOX	MEDIA	3490	BOX ID BXB BOX SIZE 000075
		00000500	TYPE	SLOT	MEDIA	3490	
			TYPE		MEDIA		
===== >>>>>>>>>>>> END OF VAULT DEFINITION PARAMETERS <<<<<<<<<<<< =====							
FILL IN VAULT DEFINITION. CMDS: EDIT, SHPF, DOC							19.55.58

Vault parameters are divided into the following basic groups shown on the following screen:

- General Vault Parameters
- Global Capacity Parameters

The groups are separated by a delimiter line.

To delete a parameter on the screen, erase it (press the EOF key, or blank it out). If additional operations are required, CONTROL-M/Tape issues the appropriate instructions.

The Vault Definition screen can also be edited using ISPF-like editing commands (such as copy, move, repeat, after, and before) in the IOA Edit environment. For additional information, see Appendix A.

The vault definition is automatically saved to a PDS member that can be edited using a standard editor such as ISPF Edit facility. Vaults originally defined using a standard editor can also be displayed and edited in the Vault Definition screen. The name of the PDS member that contains default vault definitions is \$\$VAULT.

The Vault Definition screen can be exited in various ways. The most common is to press END (**PF03/PF15**). For more information, see [“Exiting the Vault Definition Screen” on page 152](#).

Newly-defined or modified Vault definitions become effective only after the next run of utility CTTVTM.

NOTE



The parameters marked with the symbol ^M can have many occurrences. Whenever you fill the last occurrence of the parameter on the screen, CONTROL-M/Tape adds a new empty occurrence of that parameter that you can fill in. The only limit to the number of occurrences is the region size available for the application.

General Vault Parameters

General Vault parameters provide basic information about a vault.

Figure 39 General Vault Parameters

VAULT NAME	VAULT_01
LOCAL	Y
=====	
DESC	FOR DIVISION 1 MEDIA.
DESC	
OWNER	M43
ADDRESS	1234 MAIN STREET
ADDRESS	
PHONE	609-555-2684
SCHEDULE	DAILY PROCESSING
SCHEDULE	
DOCMEM	CTTDOCS
DOCLIB	CTT.PROD.DOC

Table 58 General Vault Parameters

Parameter	Description
VAULT NAME	Name of the vault.
LOCAL	Indicates whether the vault is local or remote (that is, on-site or off-site). Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — The vault is a local vault. ■ N (No) — The vault is a remote vault.
DESC	Description of the vault (free text).
OWNER	User ID of the user who owns this vault.
ADDRESS	Address of the vault (free text).
PHONE	Telephone number of the vault (free text).
SCHEDULE	Volume picking information (free text).
DOCMEM	Name of the member in which vault documentation resides.
DOCLIB	Name of the library in which vault documentation resides.

Global Capacity Parameters

Global Capacity parameters provide information about the capacity of the vault.

Figure 40 Global Capacity Parameters

===== GLOBAL CAPACITY =====					
CAPACITY	00003000	TYPE	SLOT	MEDIA	CART
	00000100	TYPE	BOX	MEDIA	TAPE
		TYPE			
				BOX ID	BXA
				BOX SIZE	000020

Table 59 Global Capacity Parameters

Parameter	Description
CAPACITY ^M	<p>List of capacities for various types of removable media. Each line of the list contains the following parameters:</p> <ul style="list-style-type: none"> ■ Quantity – Maximum number of units of the media type. ■ TYPE – Type of media storage (SLOT, BOX). ■ MEDIA – Type of media (for example, cartridge, 3400 tape, 3490). <p>Note: The following fields are only shown if the vault name is MAINLIB and the storage type is BOX.</p> <ul style="list-style-type: none"> ■ BOX ID – Name or prefix of the box. The full name cannot exceed six characters. The capacity indicates the number of boxes to define. If the capacity is 1, one box is defined, and this field indicates the full name of the box. If the capacity exceeds 1, this field indicates a prefix, and a sequentially assigned serial number for each box completes the name (the prefix and serial number combined cannot exceed six characters). ■ BOX SIZE – If TYPE is equal to BOX, maximum number of media per box.

Commands of the Vault Definition Screen

The following commands can be specified in the COMMAND field of the Vault Definition screen:

Table 60 Commands of the Vault Definition Screen

Command	Description
EDIT	The EDIT command alternately activates or deactivates the Edit environment of the Vault Definition screen. The Edit environment provides ISPF-like line editing commands for this screen. For more information, see Appendix A.
DOC	The DOC command alternately displays or hides documentation lines (independent of the SHOW VAULT DOCUMENTATION field). For additional information, see “Vault Documentation” on the following pages.

Vault Documentation

This item includes the following topics.

Display and Non-Display of Documentation

Depending on the value of the SHOW VAULT DOCUMENTATION field in the entry panel, vault documentation (meaning, DOC lines) is either displayed or hidden when you first enter the Vault Definition screen:

- If the SHOW VAULT DOCUMENTATION field is set to Y (Yes), vault documentation is displayed.
- If the SHOW VAULT DOCUMENTATION field is set to N (No), vault documentation is hidden.

Specifying the DOC command in the COMMAND field alternately displays or hides the vault's documentation.

The following is an example of the Vault Definition screen with documentation (DOC lines) displayed.

The DOC command alternately displays or hides documentation lines (independent of the SHOW VAULT DOCUMENTATION field). For additional information, see "Vault Documentation" on the following pages.

Figure 41 Vault Definition Screen with Documentation

VAULT VAULT_01 LIB CTT.PROD.VAULTS				TABLE: \$\$VAULT	
COMMAND ==>				SCROLL==> CRSR	
+-----+					
VAULT NAME	VAULT_01				
LOCAL	Y				
=====					
DESC	FOR DIVISION 1 MEDIA.				
DESC					
OWNER	M43				
ADDRESS	1234 MAIN STREET				
ADDRESS					
PHONE	609-555-2684				
SCHEDULE	DAILY PROCESSING				
SCHEDULE					
DOCMEM	CTTDOCS		DOCLIB	CTT.PROD.DOC	
=====					
DOC THIS SCREEN SHOWS WHERE THE DOCUMENTATION WILL APPEAR ON THE SCREEN					
DOC WHEN YOU USE THE DOC COMMAND. AS YOU CAN SEE, THE LINES FOLLOWING					
DOC THE DOCUMENTATION WILL BE "PUSHED" DOWNWARD. ENTER THE DOC COMMAND					
DOC AGAIN TO MAKE THIS DOCUMENTATION DISAPPEAR.					
DOC					
===== GLOBAL CAPACITY =====					
CAPACITY	00001000	TYPE	SLOT	MEDIA 3400	
FILL IN VAULT DEFINITION. CMDS: EDIT, SHPF, DOC					
				09.00.26	



NOTE

Users with DOCU/TEXT installed at their site can specify a DOCU/TEXT library and member. However, only files with an 80 character record length can be used, and only the first 71 characters are displayed.

Editing Documentation

Documentation can be edited when the DOC lines of the Vault Definition screen are displayed. Modify the DOC lines as desired. When you fill in the last DOC line and press **Enter**, a new DOC line is displayed.

Vault documentation is written to the member or library specified in the DOCMEM and DOCLIB fields in the Vault Definition screen. Therefore, it is also possible to edit the documentation directly through ISPF edit of the member; this is recommended for extensive documentation, or if complex editing is required.



NOTE

For CA-LIBRARIAN and CA-PANVALET users, the DOC command displays or hides vault documentation, but changes to the documentation are not stored. A warning message is not issued.

AutoSave and Saving Documentation

Documentation changes can be saved upon exiting the Vault Definition screen. When there are documentation changes, a Save Documentation window can be displayed depending on the value of the AUTO-SAVE DOCUMENTATION field in the entry panel:

- If the AUTO-SAVE DOCUMENTATION field was set to Y (Yes), documentation changes are automatically saved and the Save Documentation window is not displayed.
- If the AUTO-SAVE DOCUMENTATION field was set to N (No), documentation changes are not automatically saved, and the Save Documentation window is displayed as shown below. This window enables you to save or cancel the documentation changes.

Figure 42 Vault Definition Save Documentation Window

VAULT	VAULT_01	LIB	CTT.PROD.VAULTS	TABLE: \$\$VAULT
COMMAN	+	-----	-----	==> CRSR
+-----		-----		-----+
VAUL		SAVE DOCUMENTATION ==> Y		(Y/N)
LOCA				
=====		LIBRARY CTT.PROD.DOCS		=====
DESC		MEMBER CTTDOCS		
DESC				
OWNE	+	-----	-----	-----+
ADDRESS				
PHONE		609-555-2684		
SCHEDULE		DAILY PROCESSING		
SCHEDULE				
DOCMEM		CTTDOCS	DOCLIB CTT.PROD.DOC	
=====				
DOC THIS SCREEN SHOWS WHERE THE DOCUMENTATION WILL APPEAR ON THE SCREEN				
DOC WHEN YOU USE THE DOC COMMAND. AS YOU CAN SEE, THE LINES FOLLOWING				
DOC THE DOCUMENTATION WILL BE "PUSHED" DOWNWARD. ENTER THE DOC COMMAND				
DOC AGAIN TO MAKE THIS DOCUMENTATION DISAPPEAR.				
DOC				
=====				
GLOBAL CAPACITY =====				
CAPACITY	00001000	TYPE	SLOT	MEDIA 3400
FILL IN VAULT DEFINITION. CMDS: EDIT, SHPF, DOC				09.00.26

You can change the name of the library or member in the window.

- Enter Y (Yes) in the SAVE DOCUMENTATION field to save the changes.
- Enter N (No) in the SAVE DOCUMENTATION field to cancel the changes.

After specifying Y or N, the Vault List screen is displayed.

Exiting the Vault Definition Facility

To exit the Vault Definition facility, the following screens must be exited in sequence:

Table 61 Exiting the Vault Definition Facility Screen

Screen	Vault
Vault Definition screen	How you exit this screen depends on whether changes made in the Vault Definition screen should be saved. For more information, see "Exiting the Vault Definition Screen" below.
Vault List screen	How you exit this screen depends on whether changes made to each vault should be saved. For more information, see "Exiting the Vault List Screen" below.
Vault Table List screen	Exit this screen by pressing END (PF03/PF15).
Entry panel	Exit this screen by pressing END (PF03/PF15).

Exiting the Vault Definition Screen

Use the following commands to exit the Vault Definition screen:

Table 62 Commands for Exiting the Vault Definition Screen

Command	Description
END	Keep the changes made to the parameters of the vault and return to the Vault List screen. If documentation changes have been made, the Save Documentation window may be displayed. For more information, see “Exiting the Vault List Screen” on page 152 .
CANCEL	Do not keep the changes made to the parameters of the vault and return to the Vault List screen. For more information, see “Exiting the Vault List Screen” below.
NEXTVLT	Keep the changes made to the parameters of the vault and display the next vault in the Vault list (PF11/PF23).
PREVVLT	Keep the changes made to the parameters of the vault and display the previous vault in the Vault list (PF10/PF22).

NOTE



Changes made to Vault Definition parameters are initially only in memory. They are written to the disk after you exit the Vault List screen.

Exiting the Vault List Screen

Press END (**PF03/PF15**) to exit the Vault List screen. If changes have been made in the Vault Definition screen and the Vault Definition screen was exited with END (**PF03/PF15**), an Exit Option window is opened.

Figure 43 Vault List Screen Exit Option Window

```

VAULTS OF LIBRARY CTT.PROD.PARM                                TABLE: $$$VAULT
COMMAN +-----+====> CRSR
OPT  N |          PLEASE SELECT EXIT OPTION          |-----
$      |                                              |
$      |      SAVE Y   CREATE                          |
=====|                                              |
      |      LIBRARY CTT.PROD.PARM                    |
      |      TABLE  $$$VAULT                        |
      |-----+

```

OPTIONS: S SELECT D DELETE I INSERT

11.14.37

It is possible to change the name of the library or the name of the vault in the window.

- To save the changes to all modified vaults and return to the Vault Table List screen, enter Y (Yes) in the SAVE field if the table name exists in the specified library, or enter Y (Yes) in the CREATE field to create a new table name in the specified library.
- To cancel the changes to all modified vaults and return to the Vault Table List screen, enter N (No) in one of the exit options.
- Press RESET (PF04/PF16) in the Exit Option window to cancel the exit operation, and remain in the Vault List screen.
- To save changes made to vault parameters in the vault table, the entire table must be saved by entering Y in one of the exit options of the Vault List screen.

Copying Vault Definitions to Another Table

To copy one or more vault definitions from the current table to another table, specify option C (Copy) by the table names in the Vault List screen and press **Enter**. The following window is displayed:

Figure 44 Window for Copying Vaults to Another Table

VAULTS OF LIBRARY CTT.PROD.PARM

COMMAND ==>

VAULT: PLRPT010

SCROLL==> CRSR

OPT NAME

C VAULT1MAIN LIBRARY

VAULT2BACKUP LIBRARY

SPECIFY DESTINATION LIBRARY, TABLE AND RULE NAME

LIBRARY :CTM.PROD.VAULTS

TABLE :

VAULT :POOL1

PRESS END/RESET TO CANCELENTER TO PERFORM THE COPY

The window contains the following fields (some fields contain default values that can be modified):

Table 63 Fields in the Window for Copying Vaults to Another Table

Field	Description
LIBRARY	Library containing the table into which the vault definitions should be copied. Must be an existing library. Default is the current library.
TABLE	<div>Name of the table into which the vault should be copied.</div> <div>Note: A table can only be copied to another table. It cannot be copied to its own table (even if the vault is renamed). If the specified table does not exist, the table is created when the request is performed.</div>
VAULT	Name of the vault definition to be copied. If multiple vault definitions are selected, the window is first displayed with the first selected vault definition. As each request is performed or canceled, the next requested vault definition name appears.

- To perform a request, press **Enter**.
- To cancel a request, press **END (PF03/PF15)** or **RESET (PF04/PF16)**.

Inquiries and Updates

The Media Database list describes volumes and data sets that are selected according to selection criteria specified in the Inquire/Update entry panel.

The information displayed in the Media Database list is obtained from volume and data set records in the Media Database.

The Media Database list is displayed in the Media Database List screen. From this screen, you can perform the following operations on the Media Database list:

- Request additional information for any volume or data set.
- List all data sets on a given volume, or all volumes where a specific data set resides.
- List all volumes of a multi-volume chain to which a specific volume belongs.
- Update displayed information.
- Expire a volume or data set.
- Extend the expiration date of a volume or data set.
- Unscratch a volume or data set.
- Check out a volume.
- Reenter a volume that was checked out.
- Recall a volume from a vault.
- Send a volume to a vault.
- Indicate that a volume was cleaned.
- Print labels.
- Delete or Undelete a volume.

NOTE



To maintain synchronization between the CONTROL-M/Tape database and the Robotic tape library database, similar operations are automatically invoked on the Robotic tape library database.

To enter the Inquire/Update screen, specify option TI (INQ/UPD MEDIA DB) in the IOA Primary Option menu. The Inquire/Update entry panel is displayed.

NOTE



As of version 6.0.00, information from the Media Database can also be displayed from operating system consoles. This feature is designed for operations personnel, for whom the console is often more readily available than a TSO/E session. For more information, see [“Displaying Media Database Information on a z/OS Console” on page 422](#).

Inquire/Update Entry Panel

The Inquire/Update entry panel is the main user interface to CONTROL-M/Tape removable media management information.

Figure 45 Inquire/Update Entry Panel

----- CONTROL-M/Tape - INQUIRE/UPDATE ENTRY PANEL -----(TI)

COMMAND ==>

SELECT BY:

MEDIA ==>

DSNAME ==>

VOLSER ==>

SL-NAME ==> *

POOL ==>

LOCATION ==>

Media type

Volser/Mask

SL-Name/Mask

Pool name/Mask

Location name/Mask

SELECT BY DATE:

CREATE FROM ==>

EXPIRE FROM ==>

ACCESS FROM ==>

T0

T0

T0

Creation date range

Expiration date range

Last access date range

SELECT BY STATUS:

ACTIVE ==> Y

SCRATCH ==> Y

EDM CONTROL ==> Y

VAULTED only ==> N

EXTERNAL ==> Y

ATL/VTS only ==> N

DISPLAY OPTIONS:

DISPLAY TYPE ==> V

RECORD TYPE ==>

FILL IN THE SELECTION CRITERIA, AND PRESS ENTER

16.01.59

The entry panel allows you to specify selection criteria and display options for volumes and data sets. Fill in the selection criteria and display options, and press **Enter**. A list of all volumes and data sets that conform to the selection criteria is displayed in the Media Database list in the Media Database List screen.

The entry panel enables you to request different combinations of information. For example, you can list data set information, volume information, volume information for the selected data sets, and data set information for selected volumes. For additional information, see [“DISPLAY OPTIONS” on page 159](#).

Press END (PF03/PF15) to exit the entry panel to the IOA Option menu.

Fields of the Inquire/Update Entry Panel

From the entry panel you can specify any of the following selection criteria to control which volumes and data sets appear in the list:

**NOTE**

The relationship between each category is AND – meaning, all specified criteria in each category must be satisfied for a volume or data set to appear in the list.

SELECT BY**NOTE**

SELECT BY selection criteria that are marked below with the *H* symbol permit character masking. For more information, see “[Character Masking](#)” on page 62.

Table 64 Inquire/Update Entry Panel SELECT BY Selection Criteria

Criterion	Description
MEDIA	Type of volume media.
DSNAME ^M	Data set name. To indicate a specific generation of a GDG data set, specify the generation number in parentheses after the data set name. Example: DB.LOG96(-1). If a mask is specified for the data set name, CONTROL-M/Tape displays the specified generation of all GDG data sets matching the specified mask. For more information, see “ CONTROL-M/Tape Handling of Data Set Generations ” on page 417.
VOLSER from/to ^M	Lowest and highest volume serial numbers.
SL-NAME from/to ^M	Lowest and highest standard label name values.
POOL ^M	Volumes of the specified pools.
LOCATION ^M	Volumes in the specified locations (for example, VAULTA, VAULTB, MAINLIB).

SELECT BY DATE

Table 65 Inquire/Update Entry Panel SELECT BY DATE Selection Criteria

Criterion	Description
CREATE from/to	Earliest and latest data set creation dates to be included in the list. ^a
EXPIRE from/to	Earliest and latest volume and data set expiration dates to be included in the list. ^a
ACCESS from/to	Earliest and latest volume and data set last access dates to be included in the list. ^a

^a Date to be specified according to the site standard, in six-character or eight-character format (as determined by profile variable PDATELTH).

SELECT BY STATUS

Only volumes and data sets that meet the selected status criteria are displayed:

Table 66 Inquire/Update Entry Panel SELECT BY STATUS Selection Criteria

Criterion	Description
ACTIVE	Volumes that contain data sets (meaning, non-scratch), including volumes that are currently out of the library (checked out), vaulted, and volumes pending scratch.
SCRATCH	Volumes that have been scratched, including those that are pending scratch or deleted.
EDM CONTROL	Volumes under EDM control, including EDM volumes that are currently out of the library (checked out) and EDM volumes that are vaulted.
VAULTED only	Vaulted volumes and volumes that are pending vault only.
EXTERNAL	External volumes that are currently out of the library (checked out) and external volumes that are vaulted.
Robot only ^a	Volumes that currently reside in a robotic tape library.

^a CONTROL-M/Tape is not always notified when a volume is inserted into, or ejected from, a robotic tape library. For more information on the interface between CONTROL-M/Tape and the robotic tape library in use at your site, see the Robotic Tape Library Interface and Virtual Tape Server chapter of the *CONTROL-M/Tape Implementation Guide*.

DISPLAY OPTIONS

Table 67 Inquire/Update DISPLAY OPTIONS

Option	Description
DISPLAY TYPE	<p>Display type (or format) of the Media Database list. Valid values:^a</p> <ul style="list-style-type: none"> ■ D – Data set format. ■ V – Volume format. ■ B – Format that lists both volumes and data sets. ■ S – System programmer format. <p>Examples of these formats are provided later in this chapter.</p> <p>Note: While in the Inquire/Update screen, the display type can be changed using the DISPLAY command.</p>
RECORD TYPE	<p>Identifies whether Media Database information from data set records, volume records or both should be displayed. Valid values are:</p> <ul style="list-style-type: none"> ■ Blank – The type of record to display is determined by specifications in the SELECT BY criteria fields. If data set criteria are specified (meaning, DSNAME), data set records are displayed (record type =D). If volume criteria are specified (meaning, MEDIA, VOLSER, SL-NAME, POOL, and LOCATION), volume records are displayed (record type =V). This is the recommended value. ■ D – Data set record information. ■ V – Volume record information. ■ DV – Data set record information, followed by corresponding volume record information. ■ VD – Volume record information, followed by corresponding data set record information.

^a Users can define their own display types. For more information, see “Display Types” in the IOA administration chapter of the *INCONTROL for z/OS Administrator Guide*.

The records are displayed in the format specified by field DISPLAY TYPE (see above).

A blank value for the RECORD TYPE field is recommended because:

- When CONTROL-M/Tape anticipates the desired record type, it is guaranteed that the volumes and data sets are listed in a logical, meaningful order.
- The record type also determines the search method used by CONTROL-M/Tape when listing the volumes and data sets. Leaving the RECORD TYPE field blank ensures that CONTROL-M/Tape uses the optimal search method for a faster response time and best performance.

CONTROL-M/Tape automatically selects an appropriate record type depending on the display type. The automatically selected record type can be overridden through a value specified in the RECORD TYPE field. This field should only be used when a sophisticated display is needed.



NOTE

Choosing a record type that does not match the selection criteria forces CONTROL-M/Tape to scan the database record by record, instead of retrieving records through the index. This can cause considerable delay in retrieval of relevant records.

Display of Date Fields

Date fields are displayed with either 2-character or 4-character years, depending on the value of the IOA profile parameter PDATELTH.

Media Database List Screen

The Media Database list displays the list of volumes and/or data sets that meet the selection criteria.

Information for the Media Database List screen is obtained from the following types of records in the Media Database:

Table 68 Media Database Record Types

Record	Description
Volume records	Contain volume information, such as VOLSER, SL-NAME, LOCATION, and FILES (total number of files on the volume).
Data set records	Contain data set information, such as DATASET NAME, RETENTION, and CR-DATE.

Volumes that are part of a group of volumes (meaning, when a data set spans multiple volumes) are displayed with an asterisk suffix.

Header Line

The Media Database list has a header line at the top of the screen indicating display types specified in the entry panel.

DATABASE LIST < B / DV > -----(TI)
COMMAND ==> SCROLL==> CRSR
0 VOLSER/DATASET NAME CR-DATE RETENTION STATUS

Table 69 Media Database List Header Line Display Types

Type	Value
Display type	Valid values are: <ul style="list-style-type: none"> ■ V – Volume ■ D – Data set ■ B – Both ■ S – System programmer
Record type	Valid values are: <ul style="list-style-type: none"> ■ V – Volume ■ D – Data set ■ VD – Volumes followed by data sets ■ DV – Data sets followed by volumes

Display Types and Fields

For each kind of Media Database list, a number of predefined display types are available.

While in the Media Database List screen, the display type can be changed through the DISPLAY command. Format of the command is:

```
DISPLAY x
```

where *x* is the identifying letter for the desired type. DISPLAY can be abbreviated to DI.

Example

```
DI D
```

displays the data set format. Predefined values are:

- D – Data set format.
- V – Volume format.
- B – Format that lists both volumes and data sets.
- S – System programmer format.

These display types, and the fields they contain, are described in the following topics.

NOTE



You can modify display types and define new display types to suit the your needs. For information, see the IOA administration chapter of the *INCONTROL for z/OS Administrator Guide*.

Display Type V (Volume)

Figure 46 through Figure 49 show examples of display type V (Volume) for record type specifications D, V, DV, and VD. This display type presents volume and data set information in volume format. Fields are discussed on the following page.



NOTE

If the record type is D (Data set) when the display type is V (Volume), CONTROL-M/Tape presents the volume information found in the data set records. (for example, VOLSER and FILE NUMBER).

Figure 46 Inquire/Update Display Type V (Volume), Record Type V (Volume)

DATABASE LIST < V / V > -----(TI)									
COMMAND ==>									
	VOLSER	VOLSEQ	MEDIA	RETENTION	L-ACCESS	FILES	LOCATION	---STATUS---	SCROLL==> CRSR
0	BSTK01		3490	21/11/01	22/11/00	0000	MAINLIB	EDM Control	
	BSTK03		3490	15/07/01	22/11/00	0000	MAINLIB	Scratch	
	CTTCTT		TAPE	***	16/07/01	0000	MAINLIB	Scratch	
	DFP001		CART	15/07/01		0000	MAINLIB	Scratch	
	EXT003		3590	07/11/01		0000	MAINLIB	Ext-Scratch	
	FD3726		3490	15/07/01	22/11/00	0000	MAINLIB	Scratch	
	FD3861		3490	15/07/01	22/11/00	0000	MAINLIB	Scratch	
	L14789		CARTL	***		0000	MAINLIB	Scratch	
	TI0001		3490	15/07/01	22/11/00	0000	MAINLIB	Scratch	
	UE0277		3490	15/07/01	22/11/00	0000	MAINLIB	Scratch	

Figure 47 Inquire/Update Display Type V (Volume), Record Type D (Data Set)

DATABASE LIST < V / D > -----(TI)									
COMMAND ==>									
	---DATASET NAME---	FILE	NUMBER	DS	STATUS	SCROLL==> CRSR			
0	K27.TEST.LB1		0001	Active					
	K27.TEST.T005		0005	Scratch					
	K28.TEST.T001		0001	Active					
	LIXT01		0001	Scratch					
	LIXT02		0002	Scratch					
	LIXT03		0003	Active					
	M04.JOB1		0001	Scratch					
	M04.JOB2		0001	Scratch					
	M04.JOB3		0001	Scratch					
	N65.CHECK.VAULT.AB1		0001	Active					

Figure 48 Inquire/Update Display Type V (Volume), Record Type VD (Volume/Data Set)

DATABASE LIST < V / VD > -----(TI)							
COMMAND ==>							
						SCROLL==> CRSR	
O	VOLSER	VOLSEQ	MEDIA	RETENTION	L-ACCESS	FILES LOCATION	---STATUS---
	AAAAA5*	001	3490	***		0000 MAINLIB	Scratch
	M04.JOB1					0001	Scratch
	M04.JOB5					0001	Scratch
	AAAAA6		3490	***		0001 MAINLIB	Pend-Vault
	AAAAA7*	002	3490	***		0000 MAINLIB	Scratch
	M04.JOB2					0001	Scratch
	AAAAA8*	003	3490	***		0000 MAINLIB	Scratch
	M04.JOB3					0001	Scratch
	AAAAA9*	004	3490	***		0000 MAINLIB	Scratch
	M04.JOB4					0001	Scratch

Figure 49 Inquire/Update Display Type V (Volume), Record Type DV (Data Set/Volume)

DATABASE LIST < V / DV > -----(TI)							
COMMAND ==>							
						SCROLL==> CRSR	
O	---DATASET	NAME-----	FILE	NUMBER	DS	STATUS	
	M04.JOB1			0001		Scratch	
	AAAAA5*	001 3490	***	0000 MAINLIB		Scratch	
	M04.JOB2			0001		Scratch	
	AAAAA7*	002 3490	***	0000 MAINLIB		Scratch	
	M04.JOB3			0001		Scratch	
	AAAAA8*	003 3490	***	0000 MAINLIB		Scratch	
	M04.JOB4			0001		Scratch	
	AAAAA9*	004 3490	***	0000 MAINLIB		Scratch	
	M04.JOB5			0001		Scratch	
	AAAAA5*	001 3490	***	0000 MAINLIB		Scratch	

Table 70 Fields in Display Type V (Volume) for Volume Records

Field	Description
VOLSER	Volume serial number.
VOLSEQ	Sequential number of the volume within a multi-volume chain.
MEDIA	Media type.
RETENTION	Volume retention period.
L-ACCESS	Last access date of the volume.
FILES	Number of data sets stored on the volume.
LOCATION	Location of the volume.
STATUS	Status of the volume. (For more information, see “Statuses of the Inquire/Update Screen” in this chapter.)

Table 71 Fields in Display Type V (Volume) for Data Set Records

Field	Description
DATASET NAME	Name of the data set.
FILE NUMBER	Positional number of the data set on the volume.
DS STATUS	Status of the data set. (For more information, see “Statuses of the Inquire/Update Screen” in this chapter.)

Display Type D (Data Set)

Figure 50 through Figure 53 show examples of display type D (Data set) for record type specifications D, V, DV, and VD. This display type presents volume and data set information in data set format. Fields of this display type are discussed on the following page.

Note if the record type is V (Volume) when the display type is D (Data set), CONTROL-M/Tape presents the volume information found in the data set records. (for example, VOLSER and FILE NUMBER).

Figure 50 Inquire/Update Display Type D (Data Set), Record Type V (Volume)

DATABASE LIST < D / V > -----(TI)		
COMMAND ==>		
		SCROLL==> CRSR
0 VOLSER	VOLSEQ	
AAAAA3		Files: 0000
AAAAA4		Files: 0000
AAAAA5*	001	Files: 0000
AAAAA6		Files: 0001
AAAAA7*	002	Files: 0000
BSTK01		Files: 0000
BSTK03		Files: 0000
CTTCTT		Files: 0000
DFP001		Files: 0000
EXT003		Files: 0000

Figure 51 Inquire/Update Display Type D (Data Set), Record Type D (Data Set)

DATABASE LIST < D / D > -----(TI)			
COMMAND ==>			
			SCROLL==> CRSR
0 ---DATASET NAME-----	VOLSER	RETENTION	STATUS
M04.ALL	UUUUU7	CATALOG	Active
M04.ALL	UUUUU9	03/02/02	Active
M04.ALL.0	UUUUU11	03/02/02	Active
M04.JOB1	AAAAA5	CATALOG	Scratch
M04.JOB2	AAAAA7	CATALOG	Scratch
M04.JOB3	AAAAA8	CATALOG	Scratch
M04.JOB4	AAAAA9	CATALOG	Scratch
M04.JOB5	BBBBB10	29/11/01	Scratch
M04.JOB5	AAAAA5	CATALOG	Scratch
M04.000	UUUUU6	CATALOG	Active

Figure 52 Inquire/Update Display Type D (Data Set), Record Type VD (Volume/Data Set)

DATABASE LIST < D / VD > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
0 VOLSER	VOLSEQ		
AAAAA3		Files: 0000	
AAAAA4		Files: 0000	
AAAAA5*	001	Files: 0000	
M04.JOB1		AAAAA5	CATALOG Scratch
M04.JOB5		AAAAA5	CATALOG Scratch
AAAAA6		Files: 0001	
BBBBB03		Files: 0001	
K28.TEST.T001		BBBBB03	06/12/01 Active
BBBBB04		Files: 0001	
K27.TEST.LBI		BBBBB04	14/11/01 Active

Figure 53 Inquire/Update Display Type D (Data Set), Record Type DV (Data Set/Volume)

DATABASE LIST < D / DV > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
0 ---DATASET NAME-----	VOLSER	RETENTION	STATUS
K27.TEST.LBI	BABA04	14/11/01	Active
BABA04	Files: 0001		
M04.ALL	UUUUU7	CATALOG	Active
UUUUU7	Files: 0001		
M04.ALL	UUUUU9	03/02/02	Active
UUUUU9	Files: 0001		
M04.ALL	UUUUU9	03/02/02	Active
UUUUU9	Files: 0001		
M04.ALL.0	UUUUU11	03/02/02	Active
UUUUU11*	001	Files: 0001	

Table 72 Fields in Display Type D (Data Set) for Data Set Records

Field	Description
DATASET NAME	Name of the data set.
VOLSER	Volume serial number of the volume on which the data set is located.
RETENTION	Retention period for the data set.
STATUS	Status of the data set (discussed in this chapter).

Table 73 Fields in Display Type D (Data Set) for Volume Records

Field	Description
VOLSER	Volume serial number.
VOLSEQ	Sequential number of the volume within a multi-volume chain.
Files:	Number of data sets stored on the volume.

Display Type B (Both)

Figure 54 through Figure 57 show examples of display type B (Both) for record type specifications D, V, DV, and VD. This display type presents volume and data set information in a format for both volumes and data sets. Fields are discussed on the following page.

Figure 54 Inquire/Update Display Type B (Both), Record Type V (Volume)

DATABASE LIST < B / V > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
AAAAA3		21/11/01	EDM-Expo
AAAAA4		04/12/01	Act-Expo
AAAAA5* 001		***	Scratch
AAAAA6		***	Pend-Vau
AAAAA7* 002		***	Scratch
AAAAA8* 003		***	Scratch
AAAAA9* 004		***	Scratch
BSTK01		21/11/01	EDM Cont
BSTK03		15/07/01	Scratch
CTTCTT		***	Scratch

Figure 55 Inquire/Update Display Type B (Both), Record Type D (Data Set)

DATABASE LIST < B / D > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
K27.TEST.LBI	30/08/01	14/11/01	Active
K27.TEST.T005	23/01/01	07/12/01	Active
K28.TEST.T001	01/02/01	06/12/01	Active
LIXT01	19/11/01	21/11/01	Scratch
LIXT01	03/12/01	CATALOG	Active
LIXT02	19/11/01	21/11/01	Scratch
LIXT03	19/11/01	21/11/01	Scratch
M04.ALL	04/12/01	CATALOG	Active
M04.ALL	05/12/01	03/02/02	Active
M04.ALL.J0B9	05/12/01	PERMANENT	Active

Figure 56 Inquire/Update Display Type B (Both), Record Type VD (Volume/Data Set)

DATABASE LIST < B / VD > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
AAAAA3		21/11/01	EDM-Expo
AAAAA4		04/12/01	Act-Expo
AAAAA5* 001		***	Scratch
M04.J0B1	02/08/01	CATALOG	Scratch
M04.J0B5	02/08/01	CATALOG	Scratch
AAAAA6		***	Pend-Vau
BBBB03		06/12/01	Act-ATL
K28.TEST.T001	01/02/01	06/12/01	Active
BBBB04		14/11/01	Act-Out
K27.TEST.LBI	30/08/01	14/11/01	Active

Figure 57 Inquire/Update Display Type B (Both), Record Type DV (Data Set/Volume)

DATABASE LIST < B / DV > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
K27.TEST.LBI	30/08/01	14/11/01	Active
BABA04		14/11/01	Act-Out
K28.TEST.T001	01/02/01	06/12/01	Active
BABA03		06/12/01	Act-ATL
LIXT01	03/12/01	CATALOG	Active
RETEN		***	Ext-Acti
M04.ALL	04/12/01	CATALOG	Active
UUUUU7		***	Ext-Acti
M04.ALL	05/12/01	03/02/02	Active
UUUUU9		03/02/02	Ext-Acti

Table 74 Fields in Display Type B (Both) for Volume and/or Data Set Records

Field	Description
VOLSER/DATASET NAME	Volume serial number or data set name (depending on the record being displayed).
CR-DATE	Retention period for the volume or data set.
RETENTION	Expiration date of the volume or data set.
STATUS	Status of the volume or data set (discussed in this chapter).

Display Type S (System Programmer)

Figure 58 through Figure 61 show examples of display type S (System Programmer) for record type specifications D, V, DV, and VD. This display type displays the same volume and data set information (in the same format) as display type B. This display type differs from display type B in that when additional information is requested (discussed in this chapter), this display type adds additional information fields that are relevant only to system programmers. Fields are discussed on the following page.

Figure 58 Inquire/Update Display Type S (System Programmer), Record Type V (Volume)

DATABASE LIST < S / V > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
AAAAA3		21/11/01	EDM-Expo
AAAAA4		04/12/01	Act-Expo
AAAAA5* 001		***	Scratch
AAAAA6		***	Pend-Vau
AAAAA7* 002		***	Scratch
AAAAA8* 003		***	Scratch
AAAAA9* 004		***	Scratch
BSTK01		21/11/01	EDM Cont
BSTK03		15/07/01	Scratch
CITCTT		***	Scratch

Figure 59 Inquire/Update Display Type S (System Programmer), Record Type D (Data Set)

DATABASE LIST < S / D > -----(TI)			
COMMAND ===>			
		SCROLL===>	CRSR
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
K27.TEST.LBI	30/08/01	14/11/01	Active
K27.TEST.T005	23/01/01	07/12/01	Active
K28.TEST.T001	01/02/01	06/12/01	Active
LIXT01	19/11/01	21/11/01	Scratch
LIXT01	03/12/01	CATALOG	Active
LIXT02	19/11/01	21/11/01	Scratch
LIXT03	19/11/01	21/11/01	Scratch
M04.ALL	04/12/01	CATALOG	Active
M04.ALL	05/12/01	03/02/02	Active
M04.ALL.JOB9	05/12/01	PERMANENT	Active

Figure 60 Inquire/Update Display Type S (System Programmer), Record Type VD (Volume/Data Set)

DATABASE LIST < S / VD > -----(TI)			
COMMAND ===>			
		SCROLL===>	CRSR
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
AAAAA3		21/11/01	EDM-Expo
AAAAA4		04/12/01	Act-Expo
AAAAA5* 001		***	Scratch
M04.JOB1	02/08/01	CATALOG	Scratch
M04.JOB5	02/08/01	CATALOG	Scratch
AAAAA6		***	Pend-Vau
BSTK01		21/11/01	EDM Cont
BSTK03		15/07/01	Scratch
CTTCTT		***	Scratch
DFP001		15/07/01	Scratch

Figure 61 Inquire/Update Display Type S (System Programmer), Record Type DV (Data Set/Volume)

DATABASE LIST < S / DV > -----(TI)			
COMMAND ===>			
		SCROLL===>	CRSR
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
K27.TEST.LBI	30/08/01	14/11/01	Active
BABA04		14/11/01	Act-Out
K28.TEST.T001	01/02/01	06/12/01	Active
BABA03		06/12/01	Act-ATL
LIXT01	03/12/01	CATALOG	Active
RETEN		***	Ext-Acti
M04.ALL	04/12/01	CATALOG	Active
UUUUU7		***	Ext-Acti
M04.ALL	05/12/01	03/02/02	Active
UUUUU9		03/02/02	Ext-Acti

Table 75 Fields in Display Type S (System Programmer) for Volume and/or Data Set Records

Field	Description
VOLSER/DATASET NAME	Volume serial number or data set name (depending on the record being displayed).
CR-DATE	Creation date of the volume or data set.
RETENTION	Retention period for the volume or data set.
STATUS	Status of the volume or data set (discussed in this chapter).

Additional Information Option and Fields

Specifying A (Additional Info) in the OPTION field of any volume or data set listed in the Media Database list alternately displays or hides additional information about the selected volume or data set.

The set of Additional Info fields displayed depends on whether you specified A on a volume line or on a data set line. For a volume line, fields relating to volume information are displayed. For a data set line, fields relating to data set information are displayed.

NOTE



The type of line on which you specified A, not the screen display type, determines whether data set or volume information is displayed.

For display type S, Additional Info fields relevant to system programmers are displayed along with the standard Additional Info fields for the current line.

Descriptions of Additional Info fields are provided in the following topics for:

- Volume Additional Info fields for all display types
- Data set Additional Info fields for all display types
- Volume Additional Info fields unique to display type S
- Data set Additional Info fields unique to display type S

Additional Info for Volumes

Figure 62 Additional Information for Volumes Display

DATABASE LIST < V / V > ----- (TI)									
COMMAND ==>					SCROLL==> CRSR				
0	VOLSER	VOLSEQ	MEDIA	RETENTION	L-ACCESS	FILES	LOCATION	---	STATUS-----
	K02002	002	REEL	06/06/00		001	MAINLIB		Vaulted
GENERAL INFORMATION:									
Media Desc:		REEL-TAPE			Unit Name:		TAPE		
SL-Name:		K02002			Pool Name:		\$\$NOP00L		
Location:		MAINLIB			Owner:		M27A		
Description:					Vendor Name:				
Label Type:		NL			Density:		3490		
Capacity Used:		00800KB 100%			Ret-Dataset:		0001		
Data Uncomp:		00800MB			Physical vol:				
Use Count:		00000			EXCP Count:		00000000		
Last Access:					By Job:				
Last Modified:		06/06/01			By User:		M27A		
Move Date:					Return Date:				
Check-In Date:		05/05/01			Clean Date:				
Scratch Date:					Last Label:				
ATL Interface:					Tape Library:				
Stk Group:									
MULTI-VOLUME:									
Volume Seq:		002			First Volume:		K02001		
Next Volume:					Prev Volume:		K02001		
I/O ERRORS:									
Read Temp:		002			Read Perm:		000		
Write Temp:		000			Write Perm:		000		
VAULTING INFORMATION:									
Slot Num:		000			V-Dataset:		001		
Box Id					Return Date:				
Vault Name:		VAULT1			Entry Date:		06/06/01		
Retention:		VLT DAYS 0010							
----- END OF RECORD -----									
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST								18.01.59	

Additional Info Fields for Volumes

The Additional Info fields for volumes are divided into the following categories:

- General Information — General information about the volume
- Multi-volume Information — Information about volumes that are part of a chain
- I/O Errors — Total number of I/O errors for this volume.
- Vaulting Information — Information about the vault pattern of the volume.

NOTE

Not all categories are necessarily displayed. The categories displayed depend on information available for the selected volumes.

Table 76 Additional Info Fields for Volumes – General Information Fields

Field	Description
Media Desc	Description of the media (as specified in member CTT Parm).
Generic Unit	MVS generic unit name.
SL-Name	Standard label name. Logical name of the volume.
Pool Name	Name of the pool with which the volume is associated (for scratch purposes).
Location	Current location of the volume.
Owner	Owner of the volume.
Description	Description of the volume.
Vendor Name	Name of the vendor.
Label Type	Type of the label.
Density	For 3400 unit types: Tape recording density. For other tape devices: Tape recording technique.
Capacity Used	Combined size of all active data sets on the volume, and the percentage of the volume that is occupied by these data sets. Replaces “footage used,” which appeared prior to version 5.1.4.
Ret-Dataset	Data set that determines the retention period of the volume.
Data Uncomp	Uncompressed size of all active data sets on the volume.
Use Count	Number of times the volume has been “used” (for example, accessed).
EXCP Count	Number of EXCPs performed on this volume since it was last scratched.
Last Access	Date of last access of the volume.
By Job	Name of the job that last accessed the volume.
Last Modified	Date of last modification of the volume record.
By User	User who last modified the volume record.
Move Date	Last date the volume was moved.
Return Date	Date the volume should return to the active library.
Check-In Date	Date the volume was checked into the active library.
Clean Date	Date the volume was last cleaned.
Scratch Date	Date the volume was scratched.
Last Label	Last label number on the volume.
ATL Interface	Name of the Automated Tape Library interface used by CONTROL-M/Tape to access the library to which the volume belongs.
Tape Library	Name of the robotic tape library (if the volume resides in a robot).
Stk group	Name of the stacking group.

Table 77 Additional Info Fields for Volumes – Multi-Volume Information Fields

Field	Description
Volume Seq	Sequence number of the volume.
First Volume	First volume in the chain.
Next Volume	Next volume in the chain.
Prev Volume	Previous volume in the chain.

Table 78 Additional Info Fields for Volumes– I/O Errors Fields

Field	Description
Read Temp	Number of temporary read errors for this volume.
Read Perm	Number of permanent read errors for this volume.
Write Temp	Number of temporary write errors for this volume.
Write Perm	Number of permanent write errors for this volume.

Table 79 Additional Info Fields for Volumes– Vaulting Information Fields

Field	Description
V-Dataset	Label number of the data set that determined the vault pattern.
Slot Num	Slot number indicating where the volume is located in the vault.
Return Date	Date on which the volume should be returned from the active library to the vault (after the RECALL option was specified).
Box ID	Name of the box containing the volume.
Vault Name	Name of the vault.
Entry Date	Date the volume entered the vault.
Retention	Period for which the data set is retained in that vault.

Additional Info for Data Sets

Figure 63 Additional Info for Data Sets Display

DATABASE LIST < D / D > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
0 ---DATASET NAME-----	VOLSER	RETENTION	STATUS
DSN230.DB2P.IMAGCOPY.A1SAVLK	005169	10/10/00	Active
GENERAL INFORMATION:			
Sequence #:	0005	# of Volumes:	001
Rec Format:	FB	Rec Length:	00460
Block Size:	0000009200	Block Count:	000004
Comp Size:	00028KB-001%	Tape Format:	128TRACK
Uncomp Size:	00036KB		
Use Count:	00001	EXCP Count:	00000004
Modified:	06/12/01	By User:	M04
Job Account:			
Stk Group:	RETENTION INFORMATION:		
Source:	INST PARM		
Retention:	DATE	08/08/00	
CREATION INFORMATION:			
Date:	06/06/00	Time:	03:58
Job Name:	MM20DBP	Step Name:	DSNTIUT
PGM Name:		DD Name:	
UCB Addr:		CPU ID:	
Created By:		JCL EXPDT:	
SMS MGMTCLS:			
LAST READ INFORMATION:			
Date:	06/06/00	Time:	04:00
Job Name:	MM20DBP	Step Name:	DSNTIUT
PGM Name:		DD Name:	
UCB Addr:		CPU ID:	
LAST WRITE INFORMATION:			
Date:	06/06/00	Time:	04:02
Job Name:	MM20DBP	Step Name:	DSNTIUT
PGM Name:		DD Name:	
UCB Addr:		CPU ID:	
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			18.29.45

The Additional Info fields for data sets are divided into the following categories:

- **General Information** — General Information about the data set
- **Retention Information** — Information about data set retention.
- **Creation Information** — Information about the creation of the data set.
- **Last Read Information** — Information about the last time the data set was read.
- **Last Write Information** — Information about the last time the data set was written.

NOTE



Not all categories are necessarily displayed. The categories displayed depend on information available for selected data sets.

Table 80 Additional Info Fields for Fields – General Information Fields

Field	Description
Sequence #	Position (label) number of the data set in the sequence of data sets on the volume.
# of Volumes	Number of volumes on which this data set is contained.
Rec Format	Record format type.
Rec Length	Record length.
Block Size	Block size.
Block Count	Number of blocks.
Comp Size	Compressed data set size.
Uncomp Size	Uncompressed data set size.
Density	For 3400 unit types: Tape recording density. For other tape devices: Tape recording technique.
Use Count	Number of times the data set was accessed or used.
EXCP Count	Number of EXCPs (READ and WRITE) performed on the data set since its creation.
Modified	Date of last modification of the data set record.
By User	User who last modified the data set record.
Job Account	Job account of the job that created the data set.
Stk group	Name of the stacking group.

Table 81 Additional Info Fields for Fields – Retention Information Fields

Field	Description
Source	Source of the retention information (for example, rule, JCL, installation parameters).
Retention	Period for which the data set is retained.

Table 82 Additional Info Fields for Fields – Creation Information Fields (part 1 of 2)

Field	Description
Date	Date the data set was created.
Time	Time the data set was created.
Job Name	Name of the job that created the data set.
Step Name	Name of the step that created the data set.
PGM Name	Name of the program that created the data set.
DD Name	Name of DD statement.
UCB Addr	UCB address of the unit on which the data set was created.
CPU ID	ID of the CPU.
Created By	User ID of the job that created the file.

Table 82 Additional Info Fields for Fields – Creation Information Fields (part 2 of 2)

Field	Description
JCL EXPDT	Expiration date from the JCL.
SMS MGMTCLS	DFSMS Management Class.

Table 83 Additional Info Fields for Fields – Last Read Information Fields

Field	Description
Date	Date the data set was last read.
Time	Time the data set was last read.
Job Name	Name of the job that last read the data set.
Step Name	Name of the step that last read the data set.
PGM Name	Name of the program that last read the data set.
DD Name	Name of DD statement.
UCB Addr	UCB address of the unit on which the data set was read.
CPU ID	ID of the CPU.

Table 84 Additional Info Fields for Fields – Last Write Information Fields

Field	Description
Date	Date the data set was last written.
Time	Time the data set was last written.
Job Name	Name of the job that last wrote the data set.
Step Name	Name of the step that last wrote the data set.
PGM Name	Name of the program that last wrote the data set.
DD Name	Name of DD statement.
UCB Addr	UCB address of the unit on which the data set was written.
CPU ID	ID of the CPU.

Additional Info for Display Type S

The System Programmer display type (S) displays more Additional Info fields than the other display types. In fact, an entire category of fields (Status Information) is added before the General Information category. The screens and field descriptions of Additional Info fields for both volumes and data sets for display type S are described on the following pages.

Figure 64 Additional Info for Volumes – Display Type S

DATABASE LIST < S / V > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
0 VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
WORK02*		11/10/00	Active
STATUS INFORMATION:			
Status 1: 80	Status 2:	00	
Status 3: 00	Status 4:	00	
Record RBA: 00000105			
GENERAL INFORMATION:			
Media Desc: CARTRIDGE	Unit Name:	3490	
SL-Name: WORK02	Pool Name:	\$\$\$NOPOOL	
Location: MAINLIB	Owner:	M27A	
Description: THIS IS A TEST VOL	Vendor Name:	CTT	
Label Type: SL	Tape Format:	128TRACK	
Capacity Used: 00800KB 100%	Ret-Dataset:	0001	
Data Uncomp: 00800MB	Physical vol:		
Use Count: 00000	EXCP Count:	00000000	
Last Access: 04/04/00	By Job:	J0B1	
Last Modified: 03/03/00	By User:	M27A	
Move Date: 02/02/00	Return Date:		
Check-In Date:	Clean Date:	02/02/00	
Scratch Date: 01/01/00	Last Label:	001	
In-Use Date:	Job Used:		
User Field:	Files:		
ATL Interface:	Tape Library:		
Block ID: 00000000	Block ID LABEL:	0000	
Stk Group:			
MULTI-VOLUME:			
Volume Seq: 002	First Volume:	WORK01	
Next Volume: WORK03	Prev Volume:	WORK01	
I/O ERRORS:			
Read Temp: 011	Read Perm:	013	
Write Temp: 000	Write Perm:	000	
VAULTING INFORMATION:			
Slot Num: 002	V-Dataset:	001	
Box ID:	DSname Pref LTH	000	
Vault Name: VAULT1	Return Date:		
Retention CYCLE 0003	Entry Date:		
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			15.42.13

NOTE

Only Additional Info fields unique to display type S are described in [Table 85](#). Descriptions of all other fields can be found in the previous tables.

Table 85 Additional Information Fields for Volumes - Display Type S (part 1 of 2)

Field	Description
Status1/Status2/ Status3/Status4	Status information from the Volume record, displayed in hexadecimal (Hex) format. For an explanation of the codes, see Appendix D, Status Codes in the Inquire/Update screen.
Record RBA	The internal identifier of the database record.
Physical vol	The VTS physical exported stacked volume.
In-use Date	The last date that the volume was accessed ("used").

Table 85 Additional Information Fields for Volumes - Display Type S (part 2 of 2)

Field	Description
Job Used	The name of the job that last used the volume.
User Field	The field in the volume record in which the user can add up to 20 characters of free text (for example, in a user exit).
Files	The number of files on the volume.
Block ID	The physical location of the end of the last data set on the volume.
Block ID LABEL	The label of the last data set on the volume.
DSname Pref LTH	The number of characters (maximum: 44) in the data set name prefix (determined by the ON DATASET statement of the rule selected during data set creation).

Figure 65 Additional Info for Data Sets – Display Type S

DATABASE LIST < S / D > ----- (TI)		
COMMAND ==>		
SCROLL==> CRSR		
0 VOLSER/DATASET NAME	CR-DATE	EX-DATE STATUS
M21.FILE1	01/01/00	08/08/00 Active
STATUS INFORMATION:		
Status 1: 80	Status 2:	00
Status 3: 00	Last Action	W
Record RBA: 00001708		
GENERAL INFORMATION:		
Sequence #: 0005	# of Volumes:	001
Rec Format: FB	Rec Length:	00460
Block Size: 0000009200	Block Count:	000004
Comp Size: 00028KB-001%	Tape Format:	256TRACK
Uncomp Size: 00036KB		
Use Count: 00001	EXCP Count:	00000004
Modified: 06/12/01	By User:	M04
User Field:	DSname Pref LTH	044
Stk Group:	Block ID	00000000
RETENTION INFORMATION:		
Source:		
Retention:		
CREATION INFORMATION:		
Date: 01/01/00	Time:	17:45
Job Name: JOB1	Step Name:	STEP1
PGM Name: PGM1	DD Name:	DDNAME1
UCB Addr: 280	CPU ID:	
Created By:	JCL EXPDT:	
Step CC:	SMS MGMTCLS:	
Job Account:		
LAST READ INFORMATION:		
Date: 05/05/00	Time:	17:45
Job Name: JOB1	Step Name:	STEP1
PGM Name: PGM1	DD Name:	DDNAME1
UCB Addr: 280	CPU ID:	
Step CC:		
LAST WRITE INFORMATION:		
Date: 06/06/00	Time:	17:49
Job Name: JOB1	Step Name:	STEP1
PGM Name: PGM1	DD Name:	DDNAME1
UCB Addr: 280	CPU ID:	
Step CC:		
----- END OF RECORD -----		
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST		
15.43.06		

**NOTE**

Only Additional Info fields unique to display type S are described [Table 86](#). Descriptions of all other fields can be found in the previous tables.

Table 86 Additional Info Fields for Data Sets – Display Type S

Field	Description
Status1 / Status2 / Status3	Status information from the data set record, displayed in hexadecimal (Hex) format. For an explanation of the codes, see Appendix C, “Status Codes in the Inquire/Update Screen.” .
Last Action	The operation performed the last time the data set was accessed. Valid values are: <ul style="list-style-type: none"> ■ C — Create ■ R — Read ■ W — Write
Record RBA	The internal identifier of the database record.
User Field	Field in which the user can add up to 20 characters of free text (for example, in a user exit).
DSname Pref LTH	Number of characters (maximum: 44) in the data set name prefix (determined by the ON DATASET statement of the rule selected during data set creation).
Step CC	Condition code of the step in which the data set was created, read, or written.

Statutes of Volumes and Data Sets

The STATUS field indicates the current volume and data set status. The following statuses may appear:

Table 87 Statutes of Volumes and Data Sets (part 1 of 3)

Status	Description
Act-ATL	The volume is active and resides in an automated tape library.
Act-Grace	The data set is active and in a grace period.
Act-Logical	The volume is a logical volume, which means that it resides in a VTS, and is active.
Act-NSt	The volume is not available to CONTROL-M/Tape Dynamic Stacking feature.
Act-Out	The volume that is currently active is out of the active library.
Act-PVlt	The volume that is currently active is vaulted based on the vaulting patterns specified in the rule definition (meaning, it may become a vaulted volume during maintenance procedures).
Act-Recall	The volume that is currently active was recalled from a vault.
Act-Recr	The data set was recreated.

Table 87 Statuses of Volumes and Data Sets (part 2 of 3)

Status	Description
Act-RetVlt	The volume has been returned from all the vaults specified in this vaulting pattern.
Act-Stk	The data set was stacked by CONTROL-M/Tape Dynamic Stacking feature.
Act-Use	The volume that is in the active library is currently in use.
Active	The volume or data set is active.
Deleted	The volume has been marked as deleted.
EDM-ATL	The volume is managed by an External Data Manager and resides in an automated tape library.
EDM Control	The volume that is managed by an External Data Manager is currently in the active library.
EDM-Exported	The volume that is managed by an External Data Manager is currently exported out of the VTS environment.
EDM-Logical	The volume is a logical volume, thus means resides in a VTS. And the volume is managed by an External Data Manager.
EDM-Out	The volume that is managed by an External Data Manager is currently out of the active library.
EDM-PVlt	The volume that is an external volume is vaulted based on the vaulting patterns specified in the rule definition (meaning, it may become a vaulted volume during maintenance procedures).
EDM-Vaulted	The volume that is managed by an External Data Manager is currently in a vault.
Ext-Active	The volume that is an external volume is currently in the active library.
Ext-Exported	The volume that is an external volume is currently exported out of the VTS environment.
Ext-Out	The volume that is an external volume is currently out of the active library.
Ext-Scratch	The volume that is an external volume is now a scratch volume.
Ext-Vault	The volume that is an external volume is currently in a vault.
Incomplete	The data set was closed underabend.
Pend-Scratch	The volume is pending scratch (meaning, it becomes a scratch volume during maintenance procedures).
Pend-Vault	The volume that is currently active is vaulted because the user selected option V (Vault) for this volume. (The status of the volume changes to Vaulted during maintenance procedures.)
Scr-ATL	The volume is scratch and resides in an automated tape library.
Scr-Logical	The volume is a logical volume, which means that it resides in a VTS, and is scratch.
Scr-Out	The volume that is a scratch volume is currently out of the active library.
Scratch	The volume or data set is a scratch volume or data set.

Table 87 Statuses of Volumes and Data Sets (part 3 of 3)

Status	Description
Vault Recall	The volume is recalled from the vault during maintenance procedures.
Vault-Manual	The volume is currently in a vault as a result of a manual vault request.
Vault-Pend-Sc	The volume that is currently in a vault is pending scratch (meaning, it becomes a scratch volume during maintenance procedures).
Vaulted	The volume is currently in a vault.
Vlt-ATL	The volume is vaulted and resides in an automated tape library.
Vlt-Exported	The volume is vaulted and exported out of the VTS.
Vlt-Logical	The volume is a logical volume, thus means resides in a VTS. And the volume is vaulted.

Search Control Window

When a database list is requested, CONTROL-M/Tape tries to fill the entire screen display with selected records. If CONTROL-M/Tape has searched a specified threshold number of database records without filling the screen, and more records remain to be searched, CONTROL-M/Tape interrupts the search and displays the Search Control window. This window enables the user to specify what CONTROL-M/Tape should do next.

The default threshold number for searched records is initially specified in the IOA Global profile.

The Search Control window displays the number of records that have been searched or selected, and allows you to specify whether CONTROL-M/Tape should

- stop searching the remaining records and display the records already selected
- continue searching the Media Database list, pausing periodically (after a user-specified number of records have been searched) to allow the search to be stopped, if desired
- search until the entire screen is filled (an unconditional search)

You can change the number of records CONTROL-M/Tape searches by specifying a new number in the window, or by requesting that your INCONTROL administrator edit the IOA Global profile directly and change the value specified for profile parameter SINSMT.

Figure 66 Search Control Window

DATABASE LIST < V / D > ----- (TI)		
COMMAND ==>	+-----+ SCROLL==> CRSR	
0 ---DATASET N		DS STATUS
DSN230.DB2P.	NUMBER OF REJECTED RECORDS: 001001	Active
===== >>>>>>	NUMBER OF SELECTED RECORDS: 000004	<<<<<<<< =====
	PLEASE SELECT ONE OF THE FOLLOWING:	
	1 - STOP SEARCH IMMEDIATELY	
	2 - ASK AGAIN AFTER 001000 RECORDS	
	3 - UNCONDITIONAL SEARCH	
	+-----+	
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST		14.39.39

The following fields are displayed:

Table 88 Fields of the Search Control WIndow

Field	Description
NUMBER OF REJECTED RECORDS	Indicates how many records were rejected by CONTROL-M/Tape.
NUMBER OF SELECTED RECORDS	Indicates of how many records were selected by CONTROL-M/Tape.

The following options are available:

1 – STOP SEARCH IMMEDIATELY

Search is terminated. Records that have been selected until this option was issued are displayed.

2 – ASK AGAIN AFTER *number* RECORDS

Search is resumed until the specified number of records has been searched. At this point, the Search Control window is displayed again, allowing the user to continue or cancel the search.

3 – UNCONDITIONAL SEARCH

Search is resumed until the entire screen is filled or until all the records in the Media Database have been searched.

Commands of the Media Database List Screen

Use the FIND command to search for a specified string in the Media Database list.

Use the END command (PF03/PF15) to exit the Media Database list and return to the entry panel.

Use the =X command to exit the entire IOA Online facility. You are then returned to your normal operating environment.

Commands specific to the Media Database List include:

Table 89 Commands of the Media Database List Screen (part 1 of 2)

Command	Description
REFRESH	The REFRESH command refreshes the display of the current Inquire/Update screen. The previously specified selection criteria are activated again, and an updated list is displayed.
DISPLAY	While in a Media Database list, you can change the display type by using the DISPLAY command. The format of the command is: DISPLAY x where x is the identifying letter for the desired type. DISPLAY can be abbreviated DI. Example DISPLAY V displays the Volume display type of the Media Database list.
SHOW	The SHOW command (PF02/PF14) opens the Show Option window that is used to specify show criteria to determine what is shown in the Inquire/Update screen. For additional information, see “Show Option Window” below.
OPT	The OPT Command alternately displays or removes the list of Inquire/Update screen options at the bottom of the screen. For more information, see “Displaying Line Options” in this chapter.

Table 89 Commands of the Media Database List Screen (part 2 of 2)

Command	Description
SORT	<p>Command SORT sorts the records displayed in the Inquire/Update screen according to a specified record field. The format of the command is:</p> <p>SORT <i>field</i> [<i>order</i>]</p> <p>where:</p> <p><i>field</i> is the field used as a sort key for the displayed records. Mandatory. Valid field names are the External names listed in Table 1 and Table 2 of Appendix D in the <i>INCONTROL for z/OS Administrator Guide</i>.</p> <p>The fields that can be used to sort the display depend on the type of record currently displayed.</p> <p>If data set records are currently displayed, only fields in Table 1 (meaning, data set record fields) can be specified.</p> <p>If Volume records are currently displayed, only fields in Table 2 (meaning, Volume record fields) can be specified.</p> <p><i>order</i> is the order in which the records should be sorted. Optional. Valid values:</p> <ul style="list-style-type: none"> ■ A – Ascending order. Default. ■ D – Descending order.

Show Option Window

The Show Option window allows you to specify criteria to determine which volumes is included in the display. To open the window, specify the SHOW command in the COMMAND field of the Media Database List screen, or press PF02. Change criteria by making the desired changes in the appropriate fields. When all the desired changes have been typed in, press **Enter**.

Figure 67 Media Database List Screen Option Window

```

DATABASE LIST < V / V > ----- (TI)
COMMAND ==> +-----+
O VOLSER VO |          PLEASE SELECT SHOW OPTION          |
V00001      | VOLUME FIELDS:                          |
V00002      |                                          |
V00003      | L-ACCESS JOB                                FILE NUM |
V00004      | USAGE PERCENT                             MOVE DATE |
V00005      | USE COUNT                                  OWNER      |
===== >>>>>> | EXCP COUNT                                          TAPE LIB |
               +-----+

```

USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST 19.29.54

The following selection criteria are available:

NOTE



Selection criteria marked with the symbol ^c permit character masking. Character masking is discussed in this chapter.

Table 90 Selection Criteria of the Show Option Window (part 1 of 2)

Criterion	Description
L-ACCESS JOB ^c	Includes only volumes where the specified job was the last job to access the volume.
USAGE PERCENT	Includes volumes that have filled or utilized a percentage of their media that is less than, greater than, or equal to the specified usage percent n as specified. <ul style="list-style-type: none">■ n – Include volumes whose percent usage is equal to n.■ >n – Include volumes whose percent usage is greater than n.■ <n – Include volumes whose percent usage is less than n.
USE COUNT	Includes only volumes with the specified use-count.
EXCP COUNT	Includes only volumes whose EXCP count is equal to the indicated EXCP count. n – Include volumes whose number of data sets is equal to n. >n – Include volumes whose number of data sets is greater than n. <n – Include volumes whose number of data sets is less than n.
MOVE DATE	Includes only volumes that were moved on the indicated date.

Table 90 Selection Criteria of the Show Option Window (part 2 of 2)

Criterion	Description
OWNER ^c	Includes only volumes that are owned by the indicated owner.
TAPE LIB	Includes only volumes that reside in the specified robotic tape library.

Displaying Line Options

The OPT command alternatively displays or removes the list of Media Database List options at the bottom of the screen.

For a description of these options, see “Options of the Media Database List Screen” on page 185.

Figure 68 Displaying Line Options in the Media Database List Screen

DATABASE LIST < B / VD > ----- (TI)			
COMMAND ==>			
SCROLL==> CRSR			
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	01/01/00	CYCL 003	Active
RKL007			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHEK.KEE23V00	01/01/00	12/12/00	Active
VER005		02/02/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	02/02/00	Active
A ADD INFO S DS/VOL LIST U UPDATE E EXPIRE X EXTEND G GROUP P PRINT			
O CHECKOUT B BACK-IN-LIB V VAULT R RECALL D DELETE C CLEAN			19.36.23

Options of the Media Database List Screen

NOTE



Options marked with a ^V apply to volumes only. If unmarked, the option applies to both volumes and data sets.

Table 91 Options of the Media Database List Screen (part 1 of 2)

Option	Description
A (ADD INFO)	Toggle between displaying and hiding additional volume and data set information. (See examples provided in this chapter.)
S (DS/VOL LIST)	<p>List the data sets, if specified for a volume. List the volumes, if specified for a data set. The data sets and volumes appear below the specified data set or volume. These data sets or volumes are indented.</p> <p>This option is a toggle – specifying S again removes the listed data sets or volumes from the display.</p>
U (UPDATE)	Display the appropriate update panel to enable update of the record in the CONTROL-M/Tape Media Database. Either the Volume Update panel or the Dataset Update panel is displayed, depending on the type of record for which option U is specified. For additional information, see “Updating Data” in this chapter.
E (EXPIRE)	<p>Cause a (nonvaulted) volume or data set to expire.</p> <p>A confirmation window is displayed. For additional information, see “Expiring Volumes and Data Sets” in this chapter.</p> <p>To expire a vaulted volume, retrieve the volume from the vault (through option R) and then expire the volume.</p>
X (EXTEND)	Extend the expiration date of a data set or volume, and (when a volume is scratch) change the status to Active (meaning, unscratch the volume). A confirmation window is displayed. For additional information, see “Extending Expiration Dates” in this chapter.
G (GROUP) ^V	Display related volumes in the chain of multi-volume to which the currently selected volume belongs.
P (PRINT) ^V	Print an external (meaning, gummed) label.
O (CHECKOUT) ^V	Check out (borrow) a volume from the library. A confirmation window is displayed. For additional information, see “Checking Out Volumes” in this chapter.
B (BACK-IN-LIB) ^V	Return a volume that was previously checked out (meaning, the OUT indicator is removed). A confirmation window is displayed. For additional information, see “Returning Volumes” in this chapter.
V (VAULT) ^V	Mark a volume to be sent to a specific vault during maintenance procedures. A confirmation window is displayed. For additional information, see “Vaulting Volumes” in this chapter.
R (RECALL) ^V	Retrieve (recall) a volume from its current vault. Specify if and when the volume is to be returned to the vault when selecting this option. A confirmation window is displayed. For additional information, see “Recalling Volumes” in this chapter.
D (DELETE) ^V	Toggle between setting on and setting off the delete status on the volume record. A confirmation window is displayed. For additional information, see “Deleting Volumes” in this chapter.

Table 91 Options of the Media Database List Screen (part 2 of 2)

Option	Description
C (CLEAN) ^V	Indicate the volume was cleaned. A confirmation window is displayed. For additional information, see “Cleaning Volumes” in this chapter.
Z (REMOVE IN-USE) ^V	Remove the In-Use status from the volume record.

Volume Update Panel

Option U (Update) can be used to manually update the Media Database with changes to volume and data set records.

Specify option U in the Option field to the left of the record to be updated. Depending on whether the record is a volume or a data set record, the Volume Update panel or the Dataset Update panel is displayed. These update panels are discussed below.

The Volume Update panel is displayed when option U is specified for a volume record in screen TI.

Figure 69 Volume Update Panel

[illegible]

Fields of the Volume Update Panel

The fields of the Volume Update panel are described below.

Fields that cannot be updated are protected. On color monitors, values that can be updated appear in yellow, and those that cannot appear in blue. (On monochrome monitors, all values are displayed with the same visual attributes.)

By default, date values are specified in the site standard 6-character format (for example, mmddyy). However, if 8 is specified for IOA profile variable PDATLTH, date values are specified in the site standard eight character format (for example, mmddyyyy). Time values must be specified in hhmm format.

A change of value in certain fields can affect the values in dependent fields. In such cases, the changed value and dependent values are displayed in red (on color monitors, until **Enter** is pressed) and, in certain instances, dependent values are automatically changed.

For example, when the value in field MEDIA TYPE is changed from 3490 to TAPE, that field and fields MEDIA DESC, CAPACITY USED and SLOT NUM appear in red, and the value in field MEDIA DESC is automatically changed from CARTRIDGE to REEL-TAPE.

Such dependencies, when they occur, are indicated in the field descriptions that follow.

Table 92 Fields of the Volume Update Panel (part 1 of 4)

Field	Description
VOLSER	Volume serial number. Cannot be updated.
STATUS	Status of the volume. (Refer to “Statuses of the Inquire/Update Screen” in this chapter.) Generally, cannot be updated. However, may be automatically updated if the value of related field MEDIA TYPE is changed.
General Information:	
SL-NAME	Standard label name. Logical name of the volume.
OWNER	Owner of the volume.
MEDIA TYPE	Media type. A change to MEDIA TYPE can affect the following fields:
MEDIA DESC	Automatically updated.
CAPACITY USED	The Capacity Used value remains unchanged, but the Percentage Used value is automatically updated.
SLOT NUM	Affected only if the volume is vaulted.
MEDIA DESC	Description of the media (as specified in member CTT Parm). Generally, cannot be updated. However, may be automatically updated if the value of related field MEDIA TYPE is changed.
DESCRIPTION	Description of the volume.
VENDOR NAME	Name of the vendor.
STK GROUP	Name of the stacking group.
Retention and Location information:	
RETENTION	Volume retention criteria. ^a A change to this field does not change the actual expiration date (that is generally determined by the latest expiration date of the data sets in the volume). However, a change to data set retention criteria in the Dataset Update panel can cause an automatic recalculation of this value (see the description of field RETENTION in “Dataset Update Panel” in this chapter).
RET-DATASET	Data set that determines the retention period of the volume. CONTROL-M/Tape frequently modifies this field; it is therefore recommended that you not modify it.
LOCATION	Current location of the volume. Can be updated for active volumes only. Cannot be updated for scratch volumes. Changing the value of this field is equivalent to immediately moving a volume to another location. A change to LOCATION can affect the following fields:

Table 92 Fields of the Volume Update Panel (part 2 of 4)

Field	Description
MOVE DATE	Automatically updated with the current date if it was not manually updated since entering the Volume Update panel.
STATUS	Automatically changed to one of the following statuses (depending on the specified situation):
Act-Out	If LOCATION is changed from MAINLIB and no vault pattern is specified for the volume.
Active	If LOCATION is changed to MAINLIB and no value pattern is specified for the volume.
Vaulted	If LOCATION is changed from MAINLIB and a vault pattern is specified for the volume.
Act-Retvlt	If LOCATION is changed to MAINLIB and a vault pattern is specified for the volume.
VAULT NAME	Affected only if the volume is vaulted in the new location.
SLOT NUM	Affected only if the volume is vaulted in the new location. Because the current slot number may be occupied in the new location, it is recommended that SLOT NUM be set to zeros so that an unoccupied slot is automatically assigned in the new location. (See the description of SLOT NUM below.)
ENTRY DATE	Automatically updated to match the MOVE DATE if the volume is vaulted in the new location.
MOVE DATE	Last date the volume was moved. If this field was not manually updated since entering the Volume Update panel, it is automatically updated to the current date when the value of the LOCATION field is changed.
CHECKIN DATE	Date the volume was checked into the active library.
RETURN DATE	Date the volume should return to the active library.
ATL INTR	Name of the Automated Tape Library interface used by CONTROL-M/Tape to access the library to which the volume belongs.
TAPE LIBR	Name of the robotic tape library (if the volume resides in a robot).
Usage Information:	
ACTIVE DS#	Number of data sets stored on the volume ^a . Can be updated for active volumes only, but not for scratch volumes. A change to ACTIVE DS# can affect field LAST LABEL.
LAST LABEL	Last label number on the volume. Can be updated for active volumes only, but not for scratch volumes. A change to LAST LABEL can affect field ACTIVE DS#.
CAPACITY USED	Space currently in use on the volume (followed by the percentage of the total volume capacity this value represents). Can be updated for active volumes only, but not for Scratch volumes. (The percentage used value is protected but automatically updated if the CAPACITY USED value or MEDIA TYPE field is changed.)
DATA UNCOMP	Uncompressed size.
EXCP COUNT	Number of EXCPs performed on this volume since it was last scratched.

Table 92 Fields of the Volume Update Panel (part 3 of 4)

Field	Description
LAST ACCESS	Date of the last access of the volume.
BY JOB	Job that last accessed the volume.
CLEAN COUNT	Number of times option C (Clean) was specified for the volume in screen TI.
CLEAN DATE	Date the volume was last cleaned.
USE COUNT	Number of times the volume has been used (accessed).
User Information:	
USER FIELD	Free text.
Vaulting Information:	
<p>Note: Only the first three vault entries are displayed.</p> <p>If the total number of vault entries in the vault pattern for active volumes does not exceed three, vault information can be updated .</p> <p>Vault information fields are protected for scratch volumes and for active volumes that have more than three vault entries.</p>	
V-DATASET	Label number of the data set that determines the vault pattern.
SLOT NUM	<p>Slot number indicating where the volume is located in the vault. This field is affected by changes to field LOCATION, VAULT NAME and MEDIA TYPE.</p> <p>When the user confirms changes upon exiting the Volume Update panel (see “Exiting the Volume Update panel” in this chapter), if field SLOT NUM or dependent fields have been changed, first the Volume record and then the Slot Definition record are updated. If SLOT NUM was changed to zero, the first available unoccupied slot in the Slot Definition record is automatically assigned to the volume.</p> <p>If an error is detected when the Slot Definition record is being updated (for example, the specified slot number is in use by another volume), the Slot Definition record is not updated and the Volume Update panel is redisplayed to enable the user to correct the error. Note, however, that the Volume record has already been updated. At this point there is a discrepancy between the Slot Definition record and the Volume record. When this happens the user can do one of the following:</p> <p>Correct the errors and press END to exit. In this case, if there are no errors, there is no confirmation window but both the Volume record and Slot Definition record are updated with the newest values. (If there are still errors, the Volume Update panel is redisplayed.)</p> <p>Specify the CANCEL command to exit the Volume Update panel. In this case, the discrepancy between the Volume record and the Slot Definition record remains (and the same slot is used by at least two volumes).</p>

Table 92 Fields of the Volume Update Panel (part 4 of 4)

Field	Description
VAULT NAME	Name of the vault. When a vault name is defined, field RETENTION is mandatory.
ENTRY DATE	Date the volume entered the vault.
RETENTION	Retention period of the volume in the vault. Valid format and values are the same as for the UNTIL value of statement DO VAULT (for example, DATE date, MVS CATALOG, CYCLES cycles). For more information, see the DO VAULT parameter on page 356 .

^a CONTROL-M/Tape frequently modifies this field; it is therefore recommended that you not modify it.

Exiting the Volume Update Panel

To exit from the Volume Update panel to screen TI, press **(PF03/PF15) END**, or type **CANCEL** in the COMMAND field (to cancel the changes).

If changes have been made in the Volume Update panel and you exit by pressing **(PF03/PF15) END**, screen TI is displayed with the following confirmation window:

Figure 70 Volume Update Panel Exit Confirmation Window

DATABASE LIST < B / VD > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	+-----+01/01/00	CYCL 003	Active
U RKL007 <----- CONFIRM (Y/N)			Active
AFILE	+-----+01/01/00	CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHEK.KEE23V00	01/01/00	12/12/00	Active
VER005		06/06/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	12/12/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			11.05.09

- Enter **Y** (Yes) and the update is performed.
- Enter **N** (No) and the update is not performed.

Dataset Update Panel

The Dataset Update panel is displayed when option U is specified for a data set record in screen TI.

Figure 71 Dataset Update Panel

DATASET UPDATE PANEL		(TI.UD)
COMMAND ===>		SCROLL===> CRSR

DATASET	FILE1	STATUS Active
GENERAL INFORMATION:		
VOLSER	DDD001	SEQUENCE # 001
REC FORMAT	F	REC LENGTH 01024
BLOCK SIZE	01024	BLOCK COUNT 001001
COMP SIZE	00001 (MB)	TAPE FORMAT 256TRACK
UNCOMP SIZE	00001 (MB)	
USE COUNT	00000	EXCP COUNT 00000
CREATION INFORMATION:		
DATE		TIME 0000
JOB NAME		STEP NAME
PGM NAME		DD NAME
CREATED BY		SMS MGMTCLS
UCB ADDR	0000	CPU ID
JCL EXPDT	00000000	
JOB ACCOUNT		
RETENTION INFORMATION:		
RETENTION	CATALOG	And/Or
		And/Or
USER INFORMATION:		
USER FIELD		
17.41.09		

Fields of the Dataset Update Panel

The fields of the Dataset Update panel are described below.

fields that cannot be updated are protected. On color monitors, values that can be updated appear in yellow and those that cannot be updated appear in blue. (On monochrome monitors, all values are displayed with the same visual attributes.)

By default, date values are specified in the site standard 6-character format (for example, mmddyy). However, if eight has been specified for IOA profile variable PDATELTH, date values are specified in the site standard 8-character format (for example, mmddyyyy). Time values must be specified in hhmm format.

Table 93 Fields of the Dataset Update Panel (part 1 of 2)

Field	Description
DATASET	Data set name. Cannot be updated.
STATUS	Data set status. Cannot be updated.

Table 93 Fields of the Dataset Update Panel (part 2 of 2)

Field	Description
General Information:	
VOLSER	Volume serial number. Cannot be updated.
SEQUENCE #	Position (label) number of the data set in the sequence of data sets on the volume. Cannot be updated.
REC FORMAT	Record format type.
REC LENGTH	Record length.
BLOCK SIZE	Block size.
BLOCK COUNT	Number of blocks.
COMP SIZE	Compressed data set size.
UNCOMP SIZE	Uncompressed data set size.
Density	For 3400 unit types: Tape recording density. For other tape devices: Tape recording technique.
USE COUNT	Number of times the data set has been accessed or used.
EXCP COUNT	Number of EXCPs performed on this data set since it was created.
Creation Information:	
DATE	Date the data set was created.
TIME	Time the data set was created.
JOB NAME	Name of the job that created the data set.
STEP NAME	Name of the step that created the data set.
PGM NAME	Name of the program that created the data set.
DD NAME	Name of the DD statement.
CREATED BY	User ID of the job that created the data set.
SMS MGMTCLS	DFSMS Management Class.
UCB ADDR	UCB address of the unit on which the data set was created.
CPU ID	ID of the CPU.
JCL EXPDT	Expiration date from the JCL.
JOB ACCOUNT	Job account of the job that created the data set.
Retention Information:	
RETENTION	Data set retention criteria. If the retention criteria for the data set are changed, the retention date for the volume is automatically recalculated based on the following logic: If the retention criteria of all data sets on the volume are expressed as actual dates, the volume retention date is set to the highest data set retention date. If at least one data set on the volume has retention value of PERMANENT, volume retention value is set to PERMANENT. In all other cases, the volume retention field is not updated.
And/Or	Boolean connector between retention types and values.
User Information	
USER FIELD	Free text.

Exiting the Dataset Update Panel

To exit the Dataset Update panel to screen TI, press **END (PF03/PF15)**, or enter **CANCEL** in the **COMMAND** field (to cancel the changes).

If changes have been made in the Dataset Update panel and you exit by pressing **END (PF03/PF15)**, screen TI is displayed with the following confirmation window:

Figure 72 Dataset Update Panel Exit Confirmation Window

DATABASE LIST < B / VD > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	+-----+01/01/00	CYCL 003	Active
U RKL007	<----- CONFIRM (Y/N)		Active
AFILE	+-----+01/01/00	CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHEK.KEE23V00	01/01/00	12/12/00	Active
VER005		06/06/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	12/12/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	12/12/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			11.05.09

Enter **Y** (Yes) and the update is performed.

Enter **N** (No) and the update is not performed.

Expiring Volumes and Data Sets

Option **E** (Expire) can be used to expire volumes (that have not been vaulted) or data sets. Specifying this option opens a confirmation window.

Immediate or deferred expiration can be requested. Deferred expiration changes the status of the volume or data set to Pend-Scratch, and the volume or data set is erased when retention management is performed during the New Day procedure.



NOTE

If the status of a volume or data set has been changed to Pend-Scratch through option **E**, the Pend-Scratch status can be removed without altering the expiration data through the Extend (**X**) option

Expiring a Volume

When specifying Option E for a volume, the following window is opened:

Figure 73 Expire Volume Window

DATABASE LIST <			+------(TI)	
COMMAND ==>			VOLUME CONTAINS 0001 DATASETS ROLL==> CRSR	
O VOLSER/DATASET			THEY WILL BE EXPIRED AUTOMATICALLY ON STATUS	
E RKL006	<-----	IMMEDIATE EXPIRATION N (Y/N)		Active
AFILE		CONFIRM (Y/N)	03	Active
AFILE		+-----+	+03	Active
RKL007				Active
AFILE		01/01/00	CYCL 003	Active
AFILE		**/**/**	CYCL 003	Active
VER001			06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00		01/01/00	06/06/00	Pend-Scr
VER003			12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00		01/01/00	12/12/00	Active
VER005			08/08/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00		01/01/00	08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00		01/01/00	08/08/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST				17.10.06

Fill in the window as follows:

Table 94 Fields of the Expire Volume Window

Field	Description
IMMEDIATE EXPIRATION	Whether the expiration should take effect immediately. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Immediate expiration. ■ N (No) – Deferred expiration.
CONFIRM	Whether or not expiration should be performed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Perform the expiration request. ■ N (No) – Do not perform the expiration request .

NOTE



If the selected volume is part of a multi-volume chain, the entire group expires if immediate expiration is requested, or the entire group is marked as Pending-Scratch if deferred expiration is requested

Expiring a Data Set

When specifying Option E for a data set, the following window is opened:

Figure 74 Expire Dataset Window

DATABASE LIST < B / VD > ----- (TI)					
COMMAND ==>			SCROLL==> CRSR		
COMMAND ==>			SCROLL==> CRSR		
O VOLSER/DATASET			+-----+	RETENTION	STATUS
RKL006		IMMED EXPIRATION N (Y/N)			Active
E AFILE <-----		CONFIRM (Y/N)	4	CYCL 003	Active
AFILE	+		+4	CYCL 003	Active
RKL007					Active
AFILE		01/01/00		CYCL 003	Active
AFILE		**/**/**		CYCL 003	Active
VER001				06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00		01/01/00		06/06/00	Pend-Scr
VER003				12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00		01/01/00		12/12/00	Active
VER005				08/08/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00		01/01/00		08/08/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00		01/01/00		08/08/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST					17.10.06

Fill in the window as follows:

Table 95 Fields of the Expire Dataset Window

Field	Description
IMMED EXPIRATION	Whether or not the expiration should take effect immediately. <ul style="list-style-type: none"> ■ Y (Yes) – Immediate expiration. ■ N (No) – Deferred expiration.
CONFIRM	Whether or not expiration should be performed. <ul style="list-style-type: none"> ■ Y (Yes) – Perform the expiration request. ■ N (No) – Do not perform the expiration request.

Extending the Retention Period of Data Sets and Volumes

To extend the retention period of a data set or volume by a number of days, specify option X (Extend). If you want to set an expiration date to a specific date, use the Inquiry/Update entry panel. For more information about the Inquiry/Update panel, see “Inquiries and Updates” in this chapter.

Active Data Sets and Volumes

An active data set or volume is one whose Status is either Active or Pending Scratch. When you extend the retention period of an active data set or volume, CONTROL-M/Tape treats specific and non-specific expiration dates differently.

Specific Expiration Dates

The following applies to an active data set and volume that have specific expiration dates.

When you extend the retention period of a data set, CONTROL-M/Tape compares the volume's expiration date to the new expiration date of the data set. If the volume expiration date is earlier, CONTROL-M/Tape sets the volume expiration date to that of the data set.

Extending the Retention Period of Data Sets – Examples

The expiration date of a data set is January 1, and the associated volume expiration date is January 5. You extend the retention period of the data set by 10 days. CONTROL-M/Tape sets both the expiration date of both the data set and the volume to January 11.

The expiration date of a data set is January 1, and the associated volume expiration date is January 5. You extend the retention period of the data set by three days. CONTROL-M/Tape sets the data set expiration date to January 4, and leaves the volume expiration date unchanged.

When you extend the retention period of an active volume that has a specific expiration date, CONTROL-M/Tape:

Adds the number of days that you specify to the retention period of all active data sets on the volume, and changes statuses of Pending Scratch to Active.

Leaves scratched data sets unchanged.

If the volume's status is Pending Scratch, CONTROL-M/Tape changes the status to Active.

This makes extending the retention period of a volume a convenient way to extend the retention period of all active data sets on the volume.

Extending the Retention Period of Volumes – Example

A volume's expiration date is January 1, and you extend it by 10 days to January 11. CONTROL-M/Tape automatically extends the expiration dates of all active data sets on the volume by 10 days.

You can extend the retention period of an active external volume just as you would a regular volume. In addition, you can extend the retention period of an external volume that has no data sets.



NOTE

To change the status of a data set or volume from Pending Scratch to Active, use the Extend option with Number of Days set to 0. This is useful when you accidentally expire a data set or volume by using deferred expiration.

Non-specific Expiration Dates

You cannot extend the retention period of a data set whose expiration date is non-specific.

If an active volume with a non-specific expiration date contains any data sets with specific expiration dates, you can use the Extend option on the volume. In this case, CONTROL-M/Tape:

Adds the number of days that you specify to the expiration dates of active data sets that have specific expiration dates, and changes any Pending Scratch statuses to Active.

- Does not modify data sets with non-specific expiration dates.
- Does not modify scratch data sets.
- Does not modify the volume's expiration date; it remains non-specific.

Scratch Data Sets and Volumes

When you use the Extend option on a scratch data set on a scratch volume, CONTROL-M/Tape modifies all data sets and volumes in the chain. In this case, CONTROL-M/Tape unscratches all data sets and volumes and sets their retention periods to the current date plus the number of days that you specify.

Similarly, when you use the Extend option on a scratch volume, CONTROL-M/Tape unscratches all data sets and volumes in the chain, and sets their retention periods to the current date plus the number of days that you specify.

You can use the Extend option on an external scratch volume just as you would on a regular scratch volume.

To directly extend a volume's expiration date, specify option X on that volume's record.

Specifying option X for either a volume or a data set record opens up the following window:

Figure 75 Extending the Retention Period of Data Sets and Volumes (Option X) Confirmation Window

DATABASE LIST < B / VD > -----(TI)				
COMMAND ==>		+-----+ SCROLL==> CRSR		
O	VOLSER/DATASET	Extend retention data	ETENTION	STATUS
	RKL006	NUMBER OF DAYS: 0000		Active
X	AFILE <-----	CONFIRM (Y/N)	CYCL 003	Active
	AFILE	+-----+	CYCL 003	Active
	RKL007			Active
	AFILE	01/01/00	CYCL 003	Active
	AFILE	**/**/**	CYCL 003	Active
	VER001		06/06/00	Pend-Scr
	ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
	VER003		12/12/00	Active
	ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00	01/01/00	12/12/00	Active
	VER005		12/12/00	Vaulted
	ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	12/12/00	Active
	ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	12/12/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST				17.10.06

Fill in the confirmation window as follows and press **Enter**.

Table 96 Fields of the Option Extend (X) Confirmation Window

Field	Description
NUMBER OF DAYS	Number of days to extend the expiration date. If the data set status is Scratch, the expiration date is set to the current date plus the number of days specified. A value of 0000 removes Pend-Scratch status without modifying the retention criteria. Mandatory.
CONFIRM	Confirmation of extend operation. Mandatory. Valid Values are: <ul style="list-style-type: none">■ Y (Yes) – Expiration date is extended.■ N (No) – Expiration date is not extended.

Checking Out Volumes for Borrowing

Option O enables you to check out the specified volumes for borrowing. Specifying this option opens the Check Out confirmation window.

DATABASE LIST <	+-----+-----+(TI)
COMMAND ==>	OUT LOCATION: GROUP (Y/N) ==> CRSR
O VOLSER/DATASET	RETURN DATE: N STATUS
O RKL006 <-----	CONFIRM (Y/N) Active
AFILE	+-----+-----+003 Active
AFILE	01/01/00 CYCL 003 Active
RKL007	Active
AFILE	01/01/00 CYCL 003 Active
AFILE	**/**/** CYCL 003 Active
VER001	06/06/00 Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00 06/06/00 Pend-Scr
VER003	12/12/00 Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00	01/01/00 12/12/00 Active
VER005	08/08/00 Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00 08/08/00 Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00 08/08/00 Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST	17.10.06

Returning Borrowed Volumes (Back-In-Lib)

Option B (Back-In-Lib) enables you to return the specified borrowed volumes to the active library. Specifying this option opens the following confirmation window:

Figure 77 Returning Borrowed Volumes (Back-In-Lib) Confirmation Window

DATABASE LIST < B / VD > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	+-----+01/01/00	CYCL 003	Active
AFILE	GROUP (Y/N) 01/01/00	CYCL 003	Active
B RKL007 <-----	CONFIRM (Y/N)		Act-Out
AFILE	+-----+01/01/00	CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00	01/01/00	12/12/00	Active
VER005		02/02/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	02/02/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			11.05.09

The following fields are available in the Back-in-Lib confirmation window:

Table 98 Fields of the Back-in-Lib (B) Confirmation Window

Field	Description
GROUP	Whether you want the entire multi-volume group of the volume to be checked out. This field will be locked for editing if one of the volumes of that multi-volume group does not have Out status for the check-out operation.
CONFIRM	Confirmation of back-in-lib operation. Mandatory. Valid values are: <ul style="list-style-type: none">■ Y (Yes) – Volume is back in the library.■ N (No) – Volume is not back in the library.

After the return is performed, the status of the volume is returned to Active.

Vaulting Volumes

Option V enables you to indicate that the specified volumes should be either vaulted immediately, or sent to the specified vault during the New Day procedure (deferred vaulting). Specifying this option opens the Vault confirmation window.

Volumes to be vaulted during the New Day procedure (meaning, not immediately) are assigned a status of “Pend-Vault” until after the vaulting is performed.

If the specified volume was previously recalled (option R), the volume is returned to the vault from which it was recalled. Otherwise, the volume is sent to the vault only if no vaulting pattern was specified.

If a multi-volume chain is vaulted, all related volumes in the chain are vaulted as well.

Figure 78 Vault Volumes Confirmation Window

DATABASE LIST < V / V > -----(TI)							
COMMAND ==>							
SCROLL==> CRSR							
O	VOLSER	VOLSEQ	MEDIA	RETENTION	L-ACCESS	FILES	LOCATION
---							STATUS----
	CCC001						Active
	CCC002			VAULT NAME:	DAYS: 0001		Active
	CCC003			IMMEDIATE	N (Y/N)	GROUP Y (Y/N)	Active
V	CCC004	<-----		CONFIRM	(Y/N)		Active
	CCC005						Active
	CCC006		CART	***	01/07/00	0001	Active
	C00001		CART	***	01/07/00	0001	Act-PVlt
	D00001		CART	***	01/09/00	0002	MAINLIB Act-PVlt
	EE0001		CART	***	01/07/00	0001	Active
	EE0002		CART	***	01/07/00	0001	Active
	EE0003		CART	***	01/07/00	0001	Active
	EE0004		CART	***	01/07/00	0001	Active
	EE0005		CART	***	01/07/00	0001	Active
	EE0006		CART	***	01/07/00	0001	Active
	EXT001		3490	***		0001	MAINLIB Ext-Active
	EXT002		CART	01/01/00		0001	MAINLIB Ext-Active
	EXT003		CART	***		0001	MAINLIB Ext-Active
	EXT004*	001	TAPE	***		0001	MAINLIB Ext-Active
	EXT005*	002	CART	***		0001	VAULT2 Ext-Vault
	EXT006*	003	CART	***		0001	VAULT2 Ext-Vault
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST							11.57.40

The following fields are displayed in the Vault confirmation window:

Table 99 Fields of the Vault Volumes Confirmation Window (part 1 of 2)

Field	Description
VAULT NAME	Name of the vault to which to send the volumes. Mandatory.
DAYS	Number of days the volumes should remain in the vault. Mandatory.
IMMEDIATE	Whether the volume should be vaulted immediately. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Vault the specified volume immediately. ■ N (No) – Defer vaulting until the next time the New Day procedure is run. Default.

Table 99 Fields of the Vault Volumes Confirmation Window (part 2 of 2)

Field	Description
GROUP	Whether other volumes in the same multi-volume chain as the specified volume should be vaulted. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Vault all volumes in the multi-volume chain. Default. ■ N (No) – Vault only the specified volume.
CONFIRM	Confirmation of vault operation. Mandatory. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Volume is vaulted. ■ N (No) – Volume is not vaulted.

Recalling Volumes

Option R can be used to return a specified volumes to the MAINLIB library for a certain number of days (or indefinitely), after which the volume is returned to its current vault (the vault at time of recall).

Recall can be executed immediately, or it can be deferred until the next time vault management is performed during the New Day procedure. When a deferred recall is requested, the volume is assigned a status of Vault-Recall until the next time the New Day procedure is run.

If the specified volume is part of a multi-volume chain, the other volumes in the chain can optionally be recalled together with the specified volume (see parameter GROUP, described below).

When the recall option is specified, the following confirmation window is opened:

Figure 79 Recall Volumes Confirmation Window

DATABASE LIST < V / V > ----- (TI)							SCROLL==> CRSR
COMMAND ==>							---
O	VOLSER	VOLSEQ	MEDIA	RETENTION	L-ACCESS	FILES LOCATION	---STATUS---
	EE0006		CART	***	01/07/00	0001	Active
	EXT001	3490		***		0001 MAINLIB	Ext-Active
	EXT002						Ext-Active
	EXT003			PERMANENT	N (Y/N) DAYS:	0001	Ext-Active
	EXT004*	0		IMMEDIATE	N (Y/N) GROUP	Y (Y/N)	Ext-Active
R	EXT005*	0 <----		FREE SLOT	N (Y/N) CONFIRM	(Y/N)	Ext-Vault
	EXT006*	0					Ext-Vault
	EXT007		CART	***		0001 MAINLIB	Ext-Active
	EXT008*	001	CART	***		0001 MAINLIB	Ext-Active
	EXT009*	002	CART	***		0001 MAINLIB	Ext-Active
	EXT010*	001	CART	***		0001 MAINLIB	Ext-Active
	EXT011*	002	CART	***		0001 MAINLIB	Ext-Active
	EXT012	3490		11/01/00		0000 MAINLIB	Ext-Active
	EXT013*	001	3490	11/01/00		0001 MAINLIB	Ext-Active
	EXT014*	002	3490	11/01/00		0001 MAINLIB	Ext-Active
	MOM003	3490		***	12/11/00	0001 VAULT1	Vault-Manual
	NO0001		CART	01/01/00	01/07/00	0001	Active
	QQQQ02	3490		PERMANENT		0000 MAINLIB	Ext-Active
	VVV001		CART	01/01/00	01/07/00	0001	Active
	VVV002		CART	01/01/00	01/07/00	0001	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST							14.00.34

The following fields are included in the Recall confirmation window:

Table 100 Fields of the Recall Volumes Confirmation Window

Field	Description
PERMANENT	Whether the volumes should be permanently recalled to the MAINLIB library. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — Recall the specified volumes permanently. ■ N (no) — Recall the volumes for only the specified number of days. Default.
DAYS	Number of days the volumes should remain in the MAINLIB library temporarily. Mandatory if the PERMANENT field is set to N.
IMMEDIATE	Request for the recall operation to take effect immediately. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — Recall is immediate. ■ N (No) — Recall is deferred. Default.
GROUP	Whether the other volumes in the same multi-volume chain as the specified volume should be recalled. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — Recall all the volumes in the multi-volume chain. Default. ■ N (No) — Recall only the specified volume.
FREESLOT	Whether to free the slot formerly occupied by the recalled volume. This parameter is mandatory if the PERMANENT field is set to N. (If PERMANENT is set to Y, the slot is always freed.) Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — Free the slot occupied by the specified volume. On return to the vault the volume is assigned a new slot number. ■ N (No) — Save the slot for this volume. Default. The volume is returned to this slot the next time it is vaulted.
CONFIRM	Confirmation of recall operation. Mandatory. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) — Volume is recalled. ■ N (No) — Volume is not recalled.

Deleting Volumes

Option D deletes an external volume from the Media Database or changes (on and off) the delete status of a non-external volume. Specifying this option opens the Delete confirmation window.

Figure 80 Delete Volume Confirmation Window

DATABASE LIST < B / VD > -----(TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	+-----+01/01/00	CYCL 003	Active
D RKL007 <----- CONFIRM (Y/N)			Active
AFILE	+-----+01/01/00	CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00	01/01/00	12/12/00	Active
VER005		02/02/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	02/02/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			11.05.09

A confirmation window is displayed for each volume selected for deletion.

NOTE



When the Delete option is requested for a volume from the main library, it is marked as deleted. However, the delete status can be removed by again specifying the Delete option for the volume. When the Delete option is specified for an external volume, the volume is actually deleted from the database. Only scratch external volumes can be deleted.

- Enter Y (Yes) in the window to confirm the delete request.
- Enter N (No) in the window to cancel the delete request.

Cleaning Volumes

Option C indicates that the clean operation was performed on a specified volume. Specifying this option opens the Clean confirmation window.

Figure 81 Cleaning Volume Confirmation Window

DATABASE LIST < B / VD > ----- (TI)			
COMMAND ==>		SCROLL==> CRSR	
O VOLSER/DATASET NAME	CR-DATE	RETENTION	STATUS
RKL006			Active
AFILE	01/01/00	CYCL 003	Active
AFILE	+-----+01/01/00	CYCL 003	Active
C RKL007 <----- CONFIRM (Y/N)			Active
AFILE +-----+01/01/00		CYCL 003	Active
AFILE	**/**/**	CYCL 003	Active
VER001		06/06/00	Pend-Scr
ACC.RS.TE.FF.ACC18.A.RCC70V00	01/01/00	06/06/00	Pend-Scr
VER003		12/12/00	Active
ACC.YEARND.MOVE.TSSBAC.FILECHK.KEE23V00	01/01/00	12/12/00	Active
VER005		02/02/00	Vaulted
ACC.YEARND.BAL.AX.RSSN.V3322276.BAT3005	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0559V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0558V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0557V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0556V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0555V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0554V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0553V00	01/01/00	02/02/00	Active
ACC.YEARND.BAL.AX.RASD.G0552V00	01/01/00	02/02/00	Active
USE OPT COMMAND TO DISPLAY/HIDE OPTION LIST			11.05.09

- Enter **Y** (Yes) in the window and the Clean is performed. The clean date and clean count are updated. Error counters are reinitialized to zero.
- Enter **N** (No) in the window and the Clean is not performed.

Exiting the Inquire/Update Facility

Press **END (PF03/PF15)** to exit the Media Database screen and to exit the Inquire/Update entry panel.

External Volume Check-In Facility

The External Volume Check-In screen permits the definition and addition of external volumes (for example, volumes sent from other sites) to the CONTROL-M/Tape Media Database.

To enter the External Volume Check-In screen, select option **TC** in the IOA Primary Option menu. The following screen is displayed:

Figure 82 External Volume Check-In Screen

```
----- CONTROL-M/Tape EXTERNAL VOLUME CHECK-IN SCREEN -----(TC)
COMMAND ==>
+-----+
VOLSER      AX3000  SL-NAME  AX3000  VOLSER: External + Internal
MEDIA TYPE  3490                                Type of media
LABEL TYPE  SL                                Type of label (SL/NL/NSL/AL)
PRINT LABEL Y                                Print gummed label? (Y/N)
MVS CATALOG          ON UNIT          Catalog (Y/N) + Unit Name
DEL EXPIRED                                Delete when expired (Y/N)?
RETENTION   DAYS              0030      DAYS/DATE/Permanent/Catalog/Rules
ADDITIONAL INFORMATION -----
DESCRIPTION                                USER FIELD
VENDOR                                           OWNER
EXTERNAL VOLUME DATASET LIST -----
DATASET# 01 AX.BKP.SET1
DATASET# 02 AX.BKP.SET2
DATASET# 03 AX.SECU.FILE
DATASET# 04 AX.RR.MSG12
DATASET# 05 AX.RR.MSG13
+-----+

PRESS ENTER TO CHECK-IN AN EXTERNAL VOLUME                                     11.45.02
```

When the screen is entered, the previously saved data (or no data, if the default has been modified) are displayed.

During installation, a prefix for external volumes can be defined (in parameter EXTRNVOL in member CTTARM). This optionally defined prefix can be up to three characters in length (for example, EXT) and is automatically assigned to external volumes that are checked in.

If such a prefix is defined, when screen TC is entered, field VOLSER displays the first available volser beginning with the prefix (instead of the last saved volser) and field SL-NAME displays asterisks (instead of the last saved Standard Label Name). The user must replace the asterisks in field SL-NAME with the internal volume label (the SL-NAME).

Fields of the External Volume Check-In Screen

Table 101 Fields of the External Volume Check-In Screen (part 1 of 3)

Field	Description
VOLSER	Volume identifier. A local VOLSER other than the hard coded physical VOLSER can be specified to ensure unique volume identifiers in the site's database. Up to six characters must be specified. Mandatory.
SL-NAME	Physical volume serial number that is hard coded on the volume. Up to six characters can be specified. The default value matches the VOLSER. Optional.
MEDIA TYPE	Volume media type defined at time of installation in member CTT Parm. Media types can be a maximum of eight characters. Mandatory.
LABEL TYPE	Type of label. Mandatory. Valid values are: <ul style="list-style-type: none"> ■ SL – Standard label. ■ NL – No label. ■ AL – ANSI label. ■ NSL – Non-standard label.
PRINT LABEL	Whether a label is printed for the external volume. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – A label is printed. ■ N (No) – A label is not printed. Default.
MVS CATALOG	Whether the data sets on the volume should be cataloged in the MVS catalog. Optional. This field can be set to Y (Yes) only when at least one data set is defined in the EXTERNAL VOLUME DATASET LIST. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – The data sets are cataloged in the MVS catalog. ■ N (No) – The data sets are not cataloged in the MVS catalog. Default.
ON UNIT	Unit name. A unit name defined in the system. Mandatory if the data set on the volume should be cataloged. Otherwise, optional.
DEL EXPIRED	Whether to physically delete expired tape information from the Media Database. <ul style="list-style-type: none"> ■ Y (Yes) – Delete the information about the expired tape. ■ N (No) – Do not delete the information. Default. The tape remains in the database as a Scratch tape.

Table 101 Fields of the External Volume Check-In Screen (part 2 of 3)

Field	Description
RETENTION	<p>When the specified retention period expires, the external volume becomes scratch and can be used for output. Mandatory. Valid values are:</p> <ul style="list-style-type: none"> ■ DAYS (DAY) — Number of days the external volume should be retained. A maximum of four digits can be specified. ■ DATE (DAT) — The date until which the external volume should be retained. The date can be specified in 6-character or 8-character format, according to the standard used at the site (for example, mmddyy or mmddyyyy). ■ PERMANENT (P) — The external volume is retained indefinitely (meaning, the volume never expires). ■ CATALOG (C) or MVS (M) — The external volume is retained as long as its data sets are maintained by the MVS catalog. Valid only when at least one data set is defined in the EXTERNAL VOLUME DATASET LIST. ■ RULES (R) — The external volume is retained as long as at least one of its data sets is retained. The retention and vault pattern for each data set listed in the EXTERNAL VOLUME DATASET LIST (of screen TC) is determined according to CONTROL-M/Tape rules. <p>A vaulting pattern is also assigned to the external volume when RULES type retention is specified in screen TC. The vaulting pattern for the volume is determined by the vault pattern (specified in CONTROL-M/Tape rules) of the first data set on the volume, or the first data set with vaulting data (depending on the value specified for CONTROL-M/Tape installation parameter VLTBYDS1).</p>
Additional Information:	
DESCRIPTION	Description of the external volume. A maximum of 20 characters can be specified. Optional.
USER FIELD	Free text.
VENDOR	Tape vendor.
OWNER	Owner of the tape. Mandatory if the KINQOWNR PROFILE parameter is set to Y.
External Volume Dataset List:	

Table 101 Fields of the External Volume Check-In Screen (part 3 of 3)

Field	Description
DATASET #	<p>Data sets on the volume. A maximum of five data sets can be listed for the external volume. Optional. Each data set has a sequence number and an associated name with it.</p> <p>Each data set name can be a maximum of 44 characters in length.</p> <p>The last data set in the list (even if it is the only data set in the list) can be specified as a multi-volume data set.</p> <p>After specifying the data sets for the volume, press Enter.</p> <p>If data sets exist, the following lines appear at the bottom of the External Volume Check-In screen.</p> <p>If no data sets exist, the Check-In confirmation window is displayed. For information regarding confirming the check-in, refer to “Check-In Confirmation Window” in this chapter.</p> <p>Note: If no data sets are specified or only a partial list of data sets is specified, the data sets can be dynamically defined in the Media Database, if parameter DYNDs has been set to Y in member CTTTPARM (or in an equivalent rule). For more information on parameter DYNDs, refer to the <i>INCONTROL of z/OS Installation Guide</i>.</p>
ADDITIONAL VOLUMES	<p>The ADDITIONAL VOLUMES fields are displayed only when Enter is pressed after the EXTERNAL VOLUME DATASET LIST is specified. Once the ADDITIONAL VOLUMES fields are displayed, other fields on the screen cannot be modified.</p> <p>If no additional volumes need to be specified: Press Enter. The Check-In confirmation window is displayed, and the ADDITIONAL VOLUMES fields are removed from the display. For information regarding confirming the check-in, refer to “Check-In Confirmation Window” on the following pages.</p> <p>If additional volumes need to be specified: A maximum of ten additional volumes can be specified for the last data set listed in the EXTERNAL VOLUME DATASET LIST. The volumes are specified by entering pairs of VOLSERs and SL-NAMEs for each volume on the screen. Each VOLSER and SL-NAME can be a maximum of six characters in length. CONTROL-M/Tape automatically checks in these sets of VOLSERs and SL-NAMEs as external volumes, using the same information specified in this external volume definition.</p> <p>If an automatic volser generation is required and parameter EXTRNVOL in member CTTTPARM has been set, enter ‘?’ in the VOLSER field, instead of specifying a VOLSER. After pressing Enter, a volser is generated automatically in the VOLSER field, replacing the ‘?’ sign.</p> <p>After specifying additional volumes, press Enter. The Check-In confirmation window is displayed, and the ADDITIONAL VOLUMES fields are removed from the display.</p>

ADDITIONAL VOLUMES FOR DATASET# 05					
VOLSER	#01	#02	#03	#04	#05
SL-NAME	#01	#02	#03	#04	#05
VOLSER	#06	#07	#08	#09	#10
SL-NAME	#06	#07	#08	#09	#10

Check-In Confirmation Window

After the details for a volume (and its associated data sets) are specified in the External Volume Check-In screen, the confirmation window is displayed, requesting confirmation of whether the volume should be added to the Media Database.

```

-----CONTROL-M/Tape EXTERNAL VOLUME CHECK-IN SCREEN----- (TC)
COMMAND ==>
+-----+
VOLSER      EXT014    SL-NAME  BR0249    VOLSER: External + Internal
MEDIA TYPE  3490      +-----+
LABEL TYPE  SL        | PLEASE CONFIRM ADDING/UPDATE | L/AL)
PRINT LABEL Y | VOLUME EXT014 TO THE MDB Y (Y/N) | 1?
MVS CATALOG ON+-----+
DEL EXPIRED                                     Delete when expired (Y/N)?
RETENTION   DAYS      0030                      DAYs/DATE/Permanent/Catalog
ADDITIONAL INFORMATION -----
DESCRIPTION                                     USER FIELD
VENDOR                                              OWNER
EXTERNAL VOLUME DATASET LIST -----
DATASET# 01
DATASET# 02
DATASET# 03
DATASET# 04
DATASET# 05
+-----+

PRESS ENTER TO CHECK-IN AN EXTERNAL VOLUME
11.38.51

```

Enter **Y (Yes)** in the window to check in (add) the volume. The **VOLSER** is added to the Media Database and a message is displayed on top of the screen.

Enter N (No) in the window to cancel the check-in request.

Exiting the External Volume Check-In Facility

Press END (**PF03/PF15**) to exit the External Volume Check-In screen.

Condition and Resource Handling Facility

Options 4 and 7 in the IOA Primary Option menu are directly related to the handling of IOA conditions and CONTROL-M resources. The screens displayed by these options are discussed on the following pages.

IOA Conditions/Resources Screen

The IOA Conditions/Resources screen is accessed through Option 4 of the IOA Primary Option menu. It displays information from the IOA Conditions file, which contains the list of all existing prerequisite conditions, and the CONTROL-M Resources file, which contains the list of Quantitative resources and Control resources. The IOA Conditions/Resources screen enables you to

- view IOA prerequisite conditions
- view CONTROL-M Quantitative resources
- add or delete prerequisite conditions or resources or both
- change the available quantity of CONTROL-M Quantitative resources

For a description of prerequisite conditions, see [“Prerequisite Conditions” on page 55](#).

NOTE



Prior to version 6.0.00 a single file, the IOA Conditions/Resources File, contained all IOA conditions and all Control and Quantitative resources. As of version 6.0.00, the IOA Conditions/Resources File has been replaced by two files:

- IOA Conditions file - contains all IOA conditions.
 - CONTROL-M Resources file - contains all Control and Quantitative resources.
-

To enter the IOA Conditions/Resources screen, select option 4 on the IOA Primary Option menu.

Figure 85 IOA Conditions/Resources Screen

----- IOA CONDITIONS/RESOURCES ----- (4)									
COMMAND ==>					SCROLL ==> CRSR				
PREFIX ==>					DATE 0909 - 0909				
OPT	TYPE	CONDITION/RESOURCE	IOAID	USE	QUANTITY	MAX	*P	RBA	DATE
	CONTROL	CONTROLM	01	E				(00000)	
	RESOURCE	TAPEP		B	0003	0003			
	RESOURCE	CPU1		B	0098	0100			
	RESOURCE	CPU2		B	0197	0200			
	RESOURCE	TAPEP	01	U	0002			(00091)	
	RESOURCE	CPU1	01	U	0002			(00091)	
	RESOURCE	CPU2	01	U	0003			(00092)	
	RESOURCE	TAPEP	01	R	0002		1	(00093)	
COND	BR-BRIVPCC-ENDED-OK								0909
COND	BR-BRCC0001-ENDED-OK								0909
COND	BR-BRCC0002-ENDED-OK								0909
COND	BR-BRCC0003-ENDED-OK								0909
COND	BR-BRCCIND-ENDED-OK								0909
COND	BR-BRUPDT02-ENDED-OK								0909
COND	BR-BRREP001-ENDED-OK								0909
COND	BR-BRREP002-ENDED-OK								0909
COND	GL-GLINP001-ENDED-OK								0909
COND	EBD-APPL-STARTED								0909
COND	CICS-PROD-IS-UP								STAT
OPTIONS: D DELETE C CHANGE					COMMANDS: ADD			14.07.08	

To return to the IOA Primary Option menu, press the END key (PF03/PF15).

Fields of the IOA Conditions/Resources Screen

The information displayed in each screen line is:

Table 102 Fields of the IOA Conditions/Resources Screen (part 1 of 2)

Field	Description
OPT	Option to be activated on the condition or resource.
TYPE	Type of condition or resource: <ul style="list-style-type: none"> ■ COND – Prerequisite condition ■ CONTROL – Control resource ■ RESOURCE – Quantitative resource
CONDITION/ RESOURCE	Name of the condition or resource.
DATE	Original date reference of a prerequisite condition (format mmdd or ddmm depending on the site standard, or the value STAT).
When CONTROL-M is active at your site, information is displayed in the following fields.	

Table 102 Fields of the IOA Conditions/Resources Screen (part 2 of 2)

Field	Description	
USE	Resource usage indicator for Control or Quantitative resources. Valid values depend on the type of resource. For Control resources, valid values are: <ul style="list-style-type: none">■ E – Resource is being used in Exclusive mode■ S – Resource is being used in Shared mode For Quantitative resources, valid values are: <ul style="list-style-type: none">■ B – Line indicates the initial definition for the resource■ U – Line indicates an instance of resource usage■ R – Line indicates an unfulfilled critical path request (that is, a request with an *-type priority) for the resource	
QUANTITY	Quantity of a Quantitative resource. What the quantity represents depends on the value in the USE field, as follows:	
	Use	Quantity
	B	Quantity available. If the maximum quantity is more than 1 but only 1 is available, 0001 is displayed in pink for color terminals. If the maximum quantity is more than 1 but none is available, 0000 is displayed in red for color terminals.
	U	Quantity in use by the particular process.
	R	Quantity requested by the particular process, but unfulfilled.
MAX	Maximum available quantity of a Quantitative resource.	
*P	Priority of the job requesting a CONTROL-M resource using *-type priority. For more information, see the <i>CONTROL-M for z/OS User Guide</i> .	
RBA	Internal CONTROL-M ID (relative byte address) of the job currently holding a CONTROL-M resource. An RBA value of 000000 indicates that the resource was added manually.	
	Note: Line indicates an unfulfilled critical path request (that is, a request with an *-type priority) for the resource.	
IOAID	ID of the IOA installation that is using the particular Control or Quantitative resource. This value is significant when multiple IOA installations share the same resources.	

Specifying Retrieval Criteria

You can control the type and amount of information displayed in the screen by specifying retrieval criteria.

Table 103 IOA Conditions/Resources Retrieval Criteria

Field	Description
PREFIX <i>prefix</i>	If specified, limits the display to conditions with the specified prefix. To display only conditions containing a specific string, enter the string preceded by an *. Example: If *OK is entered, the following conditions are included in the display: UPDATE-ENDED-OK OK-RUN OK
COND	Determines whether prerequisite conditions are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display prerequisite conditions. Default. ■ N (No) – Do not display prerequisite conditions.
DATE <i>from – to</i>	Limits the display of prerequisite conditions to the selected date range. Valid values are: <ul style="list-style-type: none"> ■ <i>from</i> – Earliest date in the date range, in mmdd or ddmm format (depending on the site standard). The default value is three days prior to the current date. This default can be modified in the Profile member by the INCONTROL administrator. ■ <i>to</i> – Latest date in the date range, in mmdd or ddmm format (depending on the site standard). The default value is the current date.
STAT	Determines whether prerequisite conditions with a date value of STAT are displayed. (Applies only if Y is specified for COND.) Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Include prerequisite conditions with a date value of STAT. ■ N (No) – Do not include prerequisite conditions with a date value of STAT.
For sites where CONTROL-M is active:	
CONTROL	Determines whether Control resources are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display Control resources. Default. ■ N (No) – Do not display Control resources.
RES	Determines whether Quantitative resources are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display Quantitative resources. Default. ■ N (No) – Do not display Quantitative resources.

Adding Conditions and Resources – The ADD Command

The ADD command adds conditions to the IOA Conditions file and adds resources to the CONTROL-M Resources file. Type this command in the COMMAND field, and press **Enter**. Format of the command is:

ADD *type*

where *type* is one of the following:

- COND – Add a prerequisite condition. Special care must be taken when adding prerequisite conditions, because added conditions can trigger job submission.
- RESOURCE/RES – (Where CONTROL-M is active) Add a Quantitative resource. Only authorized personnel should add Quantitative resources.
- CONTROL/CON – (Where CONTROL-M is active) Add a Control resource. A Control resource entry may be added manually even if a job is holding the resource. Only authorized personnel should add Control resources.

When the ADD command is entered, an appropriate window is opened. The following window opens when ADD COND is entered.

Figure 86 IOA Conditions/Resources COND Window

IOA CONDITIONS/RESOURCES										(4)
COMMAN	+-----+ L ==> CRSR									
PREFIX	PLEASE FILL IN COND NAME, DATE AND PRESS ENTER								0909 - 0909	
OPT TY									BA DATE	
CO	NAME ==> DDMM ==>								00)	
RE										
RE	+-----+									
RE										
RESOURCE	TAPEP		01	U	0002			(00091)		
RESOURCE	CPU1		01	U	0002			(00091)		
RESOURCE	CPU2		01	U	0003			(00092)		
RESOURCE	TAPEP		01	R	0002		1	(00093)		
COND	BR-BRIVPCC-ENDED-OK								0909	
COND	BR-BRCC0001-ENDED-OK								0909	
COND	BR-BRCC0002-ENDED-OK								0909	
COND	BR-BRCC0003-ENDED-OK								0909	
COND	BR-BRCCIND-ENDED-OK								0909	
COND	BR-BRUPDT02-ENDED-OK								0909	
COND	BR-BRREP001-ENDED-OK								0909	
COND	BR-BRREP002-ENDED-OK								0909	
COND	GL-GLINP001-ENDED-OK								0909	
COND	EBD-APPL-STARTED								0909	
COND	CICS-PROD-IS-UP								STAT	
OPTIONS:	D DELETE C CHANGE		COMMANDS: ADD					14.07.08		

Fill in the window fields as described below according to the specified ADD command:

Table 104 IOA Conditions/Resources ADD Command Formats (part 1 of 2)

Format	Description
ADD COND	Enter the name of the prerequisite condition. The current working date is displayed as the default date. This date can be modified.
ADD RESOURCE or ADD RES	Enter the name of the Quantitative resource and the quantity to be added. (Where CONTROL-M is active)

Table 104 IOA Conditions/Resources ADD Command Formats (part 2 of 2)

Format	Description
ADD CONTROL or ADD CON	Enter the name of the Control resource and the control type (E – Exclusive; S – Shared). (Where CONTROL-M is active) Note: If a Control resource is manually added with a type of E (Exclusive), no jobs in WAIT SCHEDULE status that require this resource are submitted. If a Control resource is manually added with a type of S (Shared), no jobs in WAIT SCHEDULE status that require exclusive access to this resource are submitted.

After filling in the window, press **Enter** to add the condition or resource.

NOTE



If a Control resource is manually added with a type of E (Exclusive), no jobs in WAIT SCHEDULE status which require this resource are submitted.

If a Control resource is manually added with a type of S (Shared), no jobs in WAIT SCHEDULE status which require exclusive access to this resource are submitted.

To close the window without adding the condition or resource, press the RESET key (PF04/PF16).

Options of the IOA Conditions/Resources Screen

The following options can be specified for conditions and resources by typing the option in the OPT field to the left of the resource or condition name and pressing **Enter**. Available options are

Table 105 Options of the IOA Conditions/Resources Screen

Option	Description
D (DELETE)	Delete a condition or resource from the list. The event is recorded in the IOA Log file.
C (CHANGE ^a)	Change the maximum available quantity of a Quantitative resource. The event is recorded in the IOA Log file.

^a At sites where CONTROL-M is active.

These options are discussed in detail in the following topics.

Deleting Conditions and Resources — The DELETE Option

To delete conditions/resources, specify D (Delete) in the OPT field to the left of the conditions and resources being deleted and press **Enter**.

- By default, conditions and resources are deleted without confirmation from the user.
- The User profile can be customized to display a confirmation window with an arrow pointing to a delete request (beginning with the first request).

```

----- IOA CONDITIONS/RESOURCES -----(4)
COMMAND ==>                                SCROLL ==> CRSR
PREFIX ==>                                COND Y CONTROL Y RES Y STAT Y    DATE 0909 - 0909
OPT TYPE    CONDITION/RESOURCE            IOAID  USE QUANTITY  MAX  *P  RBA    DATE
      COND    SALARY-PRSL01A-OK
      COND    SALARY-PRSL002-OK
      COND    SALARY-PRSL003-OK
D  COND    CBT-TAPE-ARRIVED                <-----|   CONFIRM   |
D  COND    KPL-PRKPL03-OK                  +-----|   ASK FOR EACH ONE Y   |
      COND    KPL-PRKPL04-OK                                0909
===== >>>>>>>>>>>>>>>> B O T T O M   O F   L I S T <<<<<<<<<<<<<<<< =====

```

Table 106 IOA Conditions/Resources DELETE Confirmation Window Options

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Changing the Quantity of a Resource – The CHANGE Option (Available only if CONTROL-M is active)

To request a change to the maximum available quantity of a resource, type C (Change) in the OPT field to the left of the resource and press Enter. The following window is opened.

Figure 88 IOA Conditions/Resources CHANGE Option Window

----- IOA CONDITIONS/RESOURCES -----						(4)
COMMAN	+-----+ L ==> CRSR					
PREFIX	PLEASE FILL IN QUANT RES NAME, COUNT AND PRESS ENTER					0909 - 0909
OPT TY						BA DATE
CO	NAME ==> TAPEP COUNT ==>					000)
C RE						
RE	+-----+					
RE						
RESOURCE	TAPEP	01	U	0002	(00091)	
RESOURCE	CPU1	01	U	0002	(00091)	
RESOURCE	CPU2	01	U	0003	(00092)	
RESOURCE	TAPEP	01	R	0002	1 (00093)	
COND	BR-BRIVPCC-ENDED-OK					0909
COND	BR-BRCC0001-ENDED-OK					0909
COND	BR-BRCC0002-ENDED-OK					0909
COND	BR-BRCC0003-ENDED-OK					0909
COND	BR-BRCCIND-ENDED-OK					0909
COND	BR-BRUPDT02-ENDED-OK					0909
COND	BR-BRREP001-ENDED-OK					0909
COND	BR-BRREP002-ENDED-OK					0909
COND	GL-GLINP001-ENDED-OK					0909
COND	EBD-APPL-STARTED					0909
COND	CICS-PROD-IS-UP					STAT
OPTIONS: D DELETE C CHANGE		COMMANDS: ADD			14.07.08	

The NAME value in the window is protected and cannot be changed.

The COUNT parameter consists of two values: sign and quantity. Fill in the COUNT parameter as follows and press Enter:

Table 107 COUNT Parameter Values

Value	Description
<i>sign</i>	Valid values are (one character): <ul style="list-style-type: none">■ + (Plus) – Add the selected quantity to the current maximum available quantity to give a new maximum available quantity.■ - (Minus) – Subtract the selected quantity from the current maximum available quantity to give a new maximum available quantity.■ ' ' (Blank) – Set the maximum available quantity to the selected quantity.
<i>quantity</i>	Quantity to be used to adjust the maximum quantity of the resource (four digits) according to the specified sign. Leading zeros are required.

Fields of the IOA Manual Conditions Screen

The information displayed on each screen line is:

Table 108 Fields of the IOA Manual Conditions Screen

Field	Description
OPT	Option to be activated on the condition.
TYPE	Type of condition, meaning, COND for prerequisite condition.
CONDITION	Condition name.
DATE	Date reference of prerequisite condition. Format is either mmdd or ddmm depending on the site standard, or the date value STAT.
ADDED	Indicates whether the condition has been manually added to the IOA Conditions file. Valid values: <ul style="list-style-type: none"> ■ Y (Yes) – Condition has been added ■ N (No) – Condition has not been added

Specifying Retrieval Criteria

You can control the type and amount of information displayed in the screen by specifying retrieval criteria.

Table 109 Retrieval Criterion for IOA Manual Conditions Screen (part 1 of 2)

Criteria	Description
PREFIX <i>prefix</i>	Limits the display to conditions with the selected prefix. Default: Blank (no limit). To display only those conditions containing a specific string, enter the string preceded by an *. Example: If *OK is entered, the following conditions are included in the display: UPDATE - ENDED - OK OK - RUN OK
PENDING	Determines whether conditions not yet added are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display pending conditions. ■ N (No) – Do not display pending conditions.
ADDED	Determines whether added conditions are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display added conditions. ■ N (No) – Do not display added conditions.

Table 109 Retrieval Criterion for IOA Manual Conditions Screen (part 2 of 2)

Criteria	Description
STAT	Determines whether prerequisite conditions with a date value of STAT are displayed. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Display prerequisite conditions with a date value of STAT. ■ N (No) – Do not display prerequisite conditions with a date value of STAT.
DATE <i>from</i> – <i>to</i>	Limits the display of prerequisite conditions to the selected date range. Valid values are: <ul style="list-style-type: none"> ■ <i>from</i> – Earliest date in the date range, in mmdd or ddmm format (depending on the site standard). The default value is three days before the current date. ■ <i>to</i> – Latest date in the date range, in mmdd or ddmm format (depending on the site standard). The default value is the current date.

Adding a New Prerequisite Condition – NEW COND Command

To add a prerequisite condition to the IOA Manual Conditions file, type **NEW COND** in the COMMAND field and press **Enter**. A window is opened.

Figure 90 IOA Manual Conditions Screen NEW COND Window

```

----- IOA MANUAL CONDITIONS ----- (7)
COMMAN +-----+ L ==> CRSR
PREFIX | PLEASE FILL COND NAME AND DATE AND PRESS ENTER | 0909 - 0909
OPT TY |
CO | NAME ==> MMDD ==>
CO |
CO +-----+
CO
COND OP-SHUT-THE-SYSTEM 0909
COND DBA-START-MPMXXX 0909
COND USR-GOT-SALARY-TAPE 0909 Y
COND OP-COMMUNICATION-DOWN 0909
===== >>>>>>>>>>>>>>>> B O T T O M O F L I S T <<<<<<<<<<<<<<<< =====

OPTIONS: A ADD TO COND/RES LIST (SCREEN 4) E ERASE COMMANDS: NEW 18.33.47

```

In the NAME field of the window, type the name of the condition to be added. If the condition has a date other than the current working date, enter the date in the date field of the window, in the format DDMM or MMDD, depending on the site standard.

- To add the condition, press **Enter**.
- To close the window without adding the condition, press RESET (**PF04/PF16**).

NOTE



Adding a new condition to the IOA Manual Conditions file does not affect the IOA Conditions file.

Options of the IOA Manual Conditions Screen

To add a condition to the IOA Conditions file, or to erase a condition from the IOA Manual Conditions file, type the appropriate option in the OPT field to the left of the condition name and press **Enter**. Valid options are:

Table 110 Options of the IOA Manual Conditions Screen

Option	Description
A (ADD)	Add the condition to the IOA Conditions file (screen 4), and mark it "Added" (Y) in the IOA Manual Conditions file. The event is recorded in the IOA Log file.
E (ERASE)	Erase (Delete) a condition from the IOA Manual Conditions file. This does not affect the IOA Conditions file. This option is discussed in more detail below.

Erasing (Deleting) Conditions

To erase prerequisite conditions, type E in the OPT field to the left of the condition names being erased and press **Enter**.

A confirmation window may be displayed, depending on user profile customization:

- By default, conditions are deleted without confirmation from the user.
- If, however, the user profile member has been customized accordingly, a confirmation window is displayed with an arrow pointing to an erase request (beginning with the first request).

Figure 91 IOA Manual Conditions Screen ERASE Confirmation Window

[illegible]

If a confirmation window is displayed, fill in the window as follows and press **Enter**:

Table 111 Fields of the IOA Manual Conditions Screen ERASE Confirmation Window

Field	Description
CONFIRM	Indicates whether to process the erase (delete) request. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Process the request. ■ N (No) – Cancel the request.
ASK FOR EACH ONE	This line is displayed only if more than one erase is requested. It determines whether individual confirmation is required for each erase request. Valid values are: <ul style="list-style-type: none"> ■ Y (Yes) – Individual confirmation is required for each erase request. The selected CONFIRM value applies only to the current order or request. ■ N (No) – Individual confirmation is not required for each erase request. The selected CONFIRM value is applied to all erase requests. If CONFIRM is Y, all erase requests are processed; if CONFIRM is N, no erase request are processed.

IOA Log Facility

The IOA Log facility places automatically generated messages, which record every significant event in the life of a job, rule or mission, in the IOA Log file. Significant events recorded in the IOA Log file include normal processing occurrences, such as job submitted, as well as error conditions encountered during processing, such as job abends. Shout facility notifications and user remarks may also be recorded in the IOA Log file.

IOA Log Screen

The IOA Log screen enables you to view the information contained in the Log file. To enter the IOA Log screen, select option 5 on the IOA Primary Option menu. Upon entry, the screen displays the most recent messages currently in the IOA Log file.

Figure 92 IOA Log Screen

FILTER: -----				IOA LOG				(5)					
COMMAND ==>								SCROLL==> CRSR					
SHOW LIMIT ON ==>								DATE 060601 - 060601					
DATE	TIME	ODATE	USERID	CODE	----- M E S S A G E -----								
060601	092144	060601	M22	SPY254I	JOB CT085955	CT085955/01835	SCANNED						
060601	092144	060601	M22	SEL208I	JOB CT085955	CT085955/01835	ENDED "OK"						
060601	092150	060601	M22	SPY254I	JOB CT085956	CT085956/01836	SCANNED						
060601	092150	060601	M22	SEL208I	JOB CT085956	CT085956/01836	ENDED "OK"						
060601	092156	060601	IVP	SPY254I	JOB BRIVPCC	BRIVPCC /01843	SCANNED						
060601	092157	060601	IVP	SEL208I	JOB BRIVPCC	BRIVPCC /01843	ENDED "OK"						
060601	092157	060601	DBA	CTM659I	FREE OF TASK	BRCC0001	ODATE 060601						
				PERFORMED									
060601	092201	060601	M22	SPY281I	JOB INTR0004	INTR0004/04371	START						
				98253.1316 STOP 98253.1316 CPU 0MIN									
				00.04SEC SRB 0MIN 00.00SEC 0.19									
060601	092201	060601	M22	SPY254I	JOB INTR0004	INTR0004/04371	SCANNED						
060601	092201	060601	M22	SEL206W	JOB INTR0004	INTR0004/04371	ABENDED CC						
				SB37 STEP STEP01									
060601	092201	060601	M22	SEL219I	JOB INTR0004	INTR0004/04371	ENDED "NOT						
				OK"									
060601	092208	060601	IVP	SEL203I	JOB BRCC0001	ELIGIBLE FOR RUN							
060601	092208	060601	IVP	SUB133I	JOB BRCC0001	BRCC0002/01958	SUBMITTED						
060601	092208	060601	IVP	SEL203I	JOB BRCC0002	ELIGIBLE FOR RUN							
CMDS: SHOW, GROUP, CATEGORY, SHPF								09.43.00					

To return to the IOA Primary Option menu, press END (PF03/PF15).

Fields of the IOA Log Screen

Table 112 Fields of the IOA Log Screen

Field	Description
SHOW LIMIT ON	Identifies which selection criteria other than yes or no were entered in the IOA Log Show Screen window (USERID, MEM/MIS, JOBNAME, CATEGORY, GROUP). For more information, see “Filtering the IOA Log Screen Display” on page 230 .
DATE	Date on which the message was issued.
TIME	Time at which the message was issued.
ODATE	Original scheduling date of the job associated with the message. Format is mmddyy, ddmmyy or yymmdd, depending on the site standard. Note: When the display type is set to RBA display using the DISPLAY command, the Relative Byte Address (RBA) of the message within the IOA Log file is displayed instead of the ODATE. For more information on changing the screen display, see “Changing IOA Log Screen Display Types” on page 228 .
USERID	User ID of the job issuing the message, or user ID of the user writing to the log.
CODE	IOA message code.
MESSAGE	Text of the message. If the message is longer than the space available on the screen, the message is split and continues on the following line. Messages relating to a job have the following format: <i>tasktype memname jobname/jobid message</i>
<i>fromdate – todate</i>	Log information displayed in the screen can be limited to the specified date range in mmddyy, ddmmyy or yymmdd format, depending on the site standard. If the DATE or the ODATE value for a message is in the range selected, the message is included in the IOA Log display. Valid values are: <ul style="list-style-type: none"> ■ <i>fromdate</i> – Earliest date in the date range. ■ <i>todate</i> – Latest date in the date range.

Commands of the IOA Log Screen

The following commands can be entered in the COMMAND field.

Table 113 Commands of the IOA Log Screen

Command	Description
SHOW	<p>The SHOW command activates the specified screen filter, opens the IOA Log Show Screen window, or opens the Display Filters window, depending on the format of the command. For more information on filtering the IOA Log Screen, see “Filtering the IOA Log Screen Display” on page 230. Valid formats:</p> <ul style="list-style-type: none"> ■ SHOW <i>name</i> – Activates the specified filter. ■ SHOW ? – Opens the Display Filters window, which lists all available filters. ■ SHOW (PF02/PF14) – Opens the IOA Log Show Screen window for the currently active filter, and allows editing of that filter. ■ SHOW <i>name</i> EDIT – Opens the IOA Log Show Screen window for the specified filter, and allows editing of that filter. <p>Note: Reserved filter name DEFAULT can be used to activate or edit the default filter for the status screen. For example, SHOW DEFAULT EDIT opens the IOA Log Show Screen window for the default filter.</p> <p>Only jobs conforming to selection criteria specified in the filter are displayed in the IOA Log screen. For more information, see “Filtering the IOA Log Screen Display” on page 230.</p>
GROUP	The GROUP Command alternately displays or hides the GROUP name (if any) that is associated with the relevant job, mission or rule definition. When displayed, the name of the group appears after the job, mission or rule status.
CATEGORY ^a	The CATEGORY command alternately displays and hides the CATEGORY of the relevant CONTROL-D mission. This command applies to CONTROL-D generated messages only. When displayed, the name of the category appears after the mission status.

^a At sites where CONTROL-D or CONTROL-V are active.

Changing IOA Log Screen Display Types

While in the IOA Log screen, the display type can be changed through the DISPLAY command. Format of the command is:

DISPLAY *x*

where *x* is a 1-character code that identifies the desired display type. DISPLAY can be abbreviated DI.



NOTE

For a list of display types, enter **DISPLAY ?** to show the Display Options window. To select a display type in the window, type S in the Option field next to the ID. To exit the window without selecting a display type, press the END key (**PF03/PF15**).

Example

DI B

displays the No Reverse display.

Valid predefined displays:

Table 114 IOA Log Screen Predefined Display Types

Display	Description
A	Show RBA (Relative Byte Address) display (displays the RBA of the message within the IOA Log file in place of the ODATE)
D	Default display
B	No Reverse display (display is in No Reverse mode)

Uppercasing and lowercasing of variables' values

While in the IOA Log Screen, uppercase or lowercase mode can be set using the CAPS command. Format of the command is:

CAPS [{ON | OFF}]

In this command:

- CAPS ON – Forces all user entries to be saved and displayed in uppercase characters, regardless of the case in which they were entered. Default.
- CAPS OFF – Enables certain user entries to be saved and displayed in lowercase characters.
- CAPS – Indicates whether CAPS ON or CAPS OFF mode is active.

NOTE

Name of variables do not support lowercase characters.



Filtering the IOA Log Screen Display

Screen filters can be used to filter the IOA Log screen display.

A filter consists of a set of record selection criteria (selection fields and their values). Only records that conform to the selection criteria specified in the filter are displayed on the screen.

The INCONTROL administrator can predefine filters and place them in the General profile.

Each user can activate an existing filter in the IOA Log screen by entering the SHOW command in the COMMAND line of the IOA Log screen.

Each user can define multiple filters for the screen, through the IOA Log Show Screen window, which is described in [“Fields of the IOA Log Show Screen Window” on page 232](#). User-defined filters belong to, are assigned names by, and can only be activated by, the user who defined them. They are stored in the user profile.

You can see the list of all available filters by opening the Display Filters window.

A predefined default filter (DEFAULT) is defined for the IOA Log screen. Site-defined defaults determine whether the last filter used or the DEFAULT filter is activated upon reentry to the IOA Log screen.

Activating an existing filter in the IOA Log screen

The SHOW command can be used to activate an existing filter when you know the name of the filter.

- To activate an existing filter in the IOA Log screen, enter the SHOW command in the CSHOW *name*SHOW *name*COMMAND field, as follows:

```
SHOW name
```

where *name* is the name of the filter to be activated.

- To activate the DEFAULT filter, use DEFAULT as the name of the filter.

Display Filters Window

When you do not know the name of a filter, you can still activate a filter from the list of available filters by opening the Display Filters window. This window displays the list of all available filters. These include Global filters that are available to all users, as well as user-defined filters that are only available to the individual user. You can activate a filter from the Display Filters window, or switch to the IOA Log Show Screen window, where you can edit or define a filter.

To enter the Display Filters window, type **SHOW ?** in the **COMMAND** field of the IOA Log screen and press **Enter**.

Figure 93 IOA Log Screen Display Filters Window

FILTER: DEFAULT ----- IOA LOG ----- (5)									
COMMAND ==> SCROLL==> CRSR									
SHOW LIMIT ON ==> DATE 060601 - 060601									
DATE	TIME	ODATE	USERID	CODE	----- M E S S A G E -----				
060601	092144	060601	M22	SPY254I	JOB	CT085955	CT085955/01835	SCANNED	
060601	092144	060601	M22	SEL208I	JOB	CT085955	CT085955/01835	ENDED "OK"	
0	+-----+ B				CT085956	CT085956/01836	SCANNED		
0	DISPLAY FILTERS				B	CT085956	CT085956/01836	ENDED "OK"	
0	CMD ==> SCROLL==> CRSR				B	BRIVPCC	BRIVPCC /01843	SCANNED	
0	O NAME DESCRIPTION				B	BRIVPCC	BRIVPCC /01843	ENDED "OK"	
0	CONFIRM				EE OF TASK BRCC0001 ODATE 080800				
0	DEL				RFORMED				
0	END				B	INTRO004	INTRO004/04371	START	
0	ENDNOTOK				253.1316 STOP 98253.1316 CPU OMIN				
0	ENDOK				.04SEC SRB OMIN 00.00SEC 0.19				
0	EXEC				B	INTRO004	INTRO004/04371	SCANNED	
0	LATE				B	INTRO004	INTRO004/04371	ABENDED CC	
0	WAIT				37 STEP STEP01				
0	ECSALL				B	INTRO004	INTRO004/04371	ENDED "NOT	
0	=====>>> BOTTOM <<<=====				"				
0					B	BRCC0001	ELIGIBLE FOR RUN		
0	OPTIONS S SELECT E EDIT				B	BRCC0001	BRCC0002/01958	SUBMITTED	
0	+-----+ B				BRCC0002	ELIGIBLE FOR RUN			
CMDS: SHOW, GROUP, CATEGORY, SHPF 09.43.00									

Fields of Display Filters Window

The Display Filters window contains the following fields:

Table 115 Fields of the Display Filters Window

Field	Description
NAME	Name of the filter as it appears in the General or user profile.
DESCRIPTION	Description of the filter.

Options of the Display Filters Window

To request one of the following options, type the option in the **OPT** field to the left of the filter name and press **Enter**.

Table 116 Options of the Display Filters Window

Option	Description
S (SELECT)	Filters the entries that are displayed in the Automation Log Screen according to the criteria specified in the selected filter.
E (EDIT)	Opens the IOA Log Show Screen window, where the filter criteria are displayed. You can modify the filter criteria.

IOA Log Show Screen Window

The IOA Log Show Screen window in the IOA Log screen enables you to create or modify a filter.

- To open an existing filter for editing, enter the following command:

SHOW *filtername* EDIT

where *filtername* is the name of the filter to be displayed in the IOA Log Show Screen window.

- To edit the currently active filter, it is not necessary to enter the name of the filter or the EDIT keyword. Enter the SHOW command in the COMMAND field, or press **PF02/PF14**. The following IOA Log Show Screen window is displayed:

Figure 94 IOA Log Show Screen Window

FILTER: DEFA		+----- IOA LOG SHOW SCREEN ----- (5)		
COMMAND ==>		FILTER	SAVE (Y/N)	DESC:
SHOW LIMIT 0				
DATE	TIME			
060800	21354			
060601	22040			
060601	22040			
060601	22040			
060601	22040	CT	: GENERAL SHOUT	REAL-TIME UTILITIES
060601	22040		Y Y	Y L
060601	22040	CODE		
		URGENCY:	REGULAR Y	URGENT Y VERY-URGENT Y
060601	23034			
060601	23040			
060601	23040			
060601	23040			
060601	23040	USERID	N54A	
060601	23040	MEM/MIS	MIGDASD	
060601	23040	JOBNAME		
060601	23040	CATEGORY		
		GROUP		
CMDS: SHOW,		+-----		

- To create a new filter, open any existing filter and enter a new name and description in the FILTER and DESC fields (described in “[Fields of the IOA Log Show Screen Window](#),” below).

Fields of the IOA Log Show Screen Window

The IOA Log Show Screen window contains the following fields:

Table 117 Fields of the IOA Log Show Screen Window

Field	Description
FILTER	User-assigned name of the filter. The name entered in the FILTER field can be modified. If changes to a filter have not been saved, an asterisk is displayed to the right of the filter name. For more information, see “Closing the IOA Log Show Screen Window” on page 235.
SAVE (Y/N)	Specifies whether to save modifications to the filter upon closing the window.
DESC	User-defined description of the filter. The description entered here appears next to the name in the Displaying Filters window.

NOTE

The INCONTROL administrator can limit which installed INCONTROL products and options each user may access. However, because all INCONTROL products and the messages they issue are integrated, it may be important for users to see the messages of products and options to which they have no access. Therefore, the types of messages for all INCONTROL products are listed in the IOA Log Show Screen window, and by default, the messages of all installed products are listed in the IOA Log screen.

Fields that define the selection criteria to be applied to the screen are described below. Fill in the selection criteria as necessary.

NOTE

The selection criteria marked with the ^P symbol act on a prefix basis. For example, typing CTT in the CODE field causes the retrieval of all IOA Log file messages that start with CTT.

Table 118 IOA Log Show Screen Window Selection Criteria (part 1 of 2)

Criteria	Description
CT <i>message type</i>	To limit the type of log messages displayed, specify Y (Yes) or N (No) under the desired message type. Valid message types codes: <ul style="list-style-type: none"> ■ GENERAL – General messages about CONTROL-M/Tape operation. ■ SHOUT – Messages written to the IOA Log file by the DO SHOUT parameter. For more information about the DO SHOUT parameter, see page 333. ■ REAL-TIME – Messages written from the CONTROL-M/Tape real-time environment (SVC). ■ UTILITIES – Messages written from CONTROL-M/Tape batch utilities.
CODEP	Show only IOA Log file messages with the specified message IDs or prefix(es). A maximum of 6 message IDs (or prefixes) can be specified.

Table 118 IOA Log Show Screen Window Selection Criteria (part 2 of 2)

Criteria	Description
URGENCY	Mark Y (Yes) or N (No) to specify the desired urgency of messages. Urgent and very urgent messages are highlighted.
USERIDP	Show only messages of the selected user IDs. A maximum of five user IDs can be specified.
Note: Selection criteria MEM/MIS, JOBNAME, CATEGORY, and GROUP, described below, only affect the display of messages related to a mission. Messages not related to a mission are not affected by these selection criteria and are displayed unless suppressed by other selection criteria.	
MEM/MISP	Limit displayed job messages to the selected member names. A maximum of five member names can be specified. Messages not related to a job are not affected by this show limit.
JOBNAMEP	Limit displayed job messages to the selected job names. A maximum of five job names can be specified. Messages not related to a job are not affected by this show limit.
CATEGORY	CONTROL-D category. This selection field is not relevant to CONTROL-M and does not filter CONTROL-M jobs.
GROUPE	Limit displayed job messages to the selected groups. A maximum of four groups can be specified. Messages not related to a job are not affected by this show limit.

IOA Log Show Screen window (at Sites Where Multiple IOA Products Are Active)

The IOA Log Show Screen window displays different selection criteria depending on which INCONTROL products are operational at your site.

The IOA Log Show Screen window at sites where all INCONTROL products are active is illustrated below.

Figure 95 IOA Log Show Screen Window at Sites where Multiple INCONTROL Products are Active

FILTER: DEFA		IOA LOG SHOW SCREEN -----(5)														
COMMAND ==>		FILTER SAVE (Y/N)														
SHOW LIMIT 0		CM	:	D	JOB	M	JOB	SHOUT	USER	GENERAL	D	INT	M	INT	STAT	
DATE	TIME			Y		Y		Y	Y	Y	N		N	N		
060800	21354	CO+CMEM:		GENERAL			SHOUT	JOBS		GENERAL	W	PIPE	W	JOB	W	
				Y			Y	Y								
060601	22040	CD+CV	:	SBSYS	REP	MIS	SHOUT	USER	GENERAL	DAILY	MONIT			STAT		
060601	22040			Y	Y	Y	Y	Y	Y	N	N	N				
060601	22040	CB	:	RUNTIME			SHOUT	DAILY	GENERAL	STATISTICS						
				Y			Y	Y	Y	Y						
060601	22040	CT	:	GENERAL			SHOUT		REAL-TIME	UTILITIES						
060601	22040			Y			Y		Y	Y						
060601	22040	CODE														
		URGENCY:					REGULAR	Y	URGENT	Y	VERY-URGENT	Y				
060601	23034	TASK TYPE		CM:	JOB	CYC	EMR	STC	CST	EST	ECJ	ECS	WRN	GRP		
060601	23040				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
060601	23040			CD:	REP	PRT	BKP/MIG	RST	EMR	NOEMR	CYC	NOCYC				
060601	23040				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
		USERID					N54A									
060601	23040	MEM/MIS					MIGDASD									
060601	23040	JOBNAME														
060601	23040	CATEGORY														
		GROUP														
CMDS: SHOW.		-----+														

The CONTROL-M/Tape selection criteria are described in [Table 118 on page 233](#). For descriptions of the selection options for other INCONTROL products, see the user guides of the respective products.

NOTE



The INCONTROL administrator can limit which installed INCONTROL products and options each user can access. However, because all INCONTROL products and the messages they issue are integrated, it may be important for users to see the messages of products and options to which they have no access. Therefore, the types of messages for all INCONTROL products are listed in the IOA Log Show Screen window, and by default, the messages of all installed products are listed in the IOA Log screen.

Closing the IOA Log Show Screen Window

You can activate an edited filter with or without saving changes, depending on the value you type in the SAVE field, as follows:

- To activate and save the filter, type **Y** (Yes) in the SAVE field. Changes to the filter are permanently saved.
- To activate the filter without saving it, type **N** (No) in the SAVE field. Changes are kept in memory only, but are not saved.

After entering a value in the SAVE field, press one of the following keys:

Table 119 IOA Log Show Screen window - Closing Values

Key	Description
Enter	Filtering begins with the first message currently displayed in the screen and continues downward.
PF07 (UP)	Filtering begins with the first message in the IOA Log file and continues downward.
PF08 (DOWN)	Filtering begins with the last message in the IOA Log file and continues upward.

The window is closed and the filter is activated as defined or modified.

To cancel changes made in the IOA Log Show Screen window, press **RESET (PF10/PF22)**. The changes are canceled regardless of the value entered in the **SAVE** field, the window is closed, and the filter that was previously in effect is restored.

By default, pressing **END (PF03/PF15)** in the window works like pressing **Enter**. However, the default can be modified so that pressing **END** works like pressing **RESET**.

IOA Calendar Facility

The IOA Calendar facility enables you to create, view, or modify calendar definitions.

Calendars simplify the scheduling of INCONTROL product jobs, missions, rules, and so on. When a particular schedule is used in many job scheduling, mission, and/or rule definitions, a calendar can be defined for that schedule, and the name of that calendar can be specified in all the job, mission, or rule definitions that use that particular schedule.

For example, calendars may be defined to handle the normal scheduling needs for workdays, holidays, weekends, beginning of month, end of month, and so on. Exception calendars may also be created.

A calendar definition consists of parameters that specify when scheduling occurs.

Calendar definitions are stored in members. A member usually contains multiple calendar definitions, as follows:

- A member contains the calendars required for a specific type of scheduling need. For example, the calendar member **WORKDAYS** may contain the calendar definitions for normal workday scheduling.

- Each calendar definition in that member defines the schedule for a given year. For example, the calendar member WORKDAYS may contain calendar definitions 2001, 2002, and 2003. Each of those definitions contains the normal workday schedule for the corresponding year.

The IOA Calendar facility also enables the definition of varied work periods throughout the year, in special calendars called periodic calendars.

A calendar definition needs to be created only once. Once defined, the definition is saved and used as necessary for scheduling. Calendar definitions can be modified or deleted as required.

Any number of calendar members can be defined. Calendar members are stored in calendar libraries (partitioned data sets). Generally one calendar library is defined at time of installation, and referenced by DD statement DACAL.

NOTE



The IOA Calendar facility does not support members that have been compressed using the ISPF PACK option.

Accessing the IOA Calendar Facility

The IOA Calendar facility contains the following screens:

Table 120 IOA Calendar Facility Screens

Screen	Description
IOA Calendar Facility entry panel	Enables specification of parameters that determine which records are displayed in subsequent screens.
Calendar List screen	Displays the list of calendar members in the selected calendar library.
Year List screen	Displays the list of years for which there is a calendar definition in the selected calendar member.
Calendar Definition screen	Displays the parameters of the selected calendar for the selected year. This is the main screen of the facility.

To enter the Calendar facility, select Option 8 in the IOA Primary Option menu. The Calendar facility entry panel is displayed.

Depending on the values entered in the entry panel, you can bypass the Calendar List screen and/or the Year List screen.

IOA Calendar Facility Entry Panel

The entry panel is displayed upon entering the IOA Calendar facility (option 8 in the IOA Primary Option menu).

Figure 96 IOA Calendar Facility Entry Panel

----- IOA CALENDAR FACILITY - ENTRY PANEL ----- (8)

COMMAND ==>

SPECIFY LIBRARY, CALENDAR, YEAR

LIBRARY ==> IOA.PROD.CAL

CALENDAR ==> (Blank for calendar selection list)

YEAR ==> (Blank for year selection list)

USE THE COMMAND "SHPF" TO SEE PFK ASSIGNMENT

10.58.42

Fields of the IOA Calendar Facility Entry Panel

Fill in the following fields and press **Enter**.

Table 121 Fields of the IOA Calendar Facility Entry Panel (part 1 of 2)

Field	Description
LIBRARY	<p>Name of the desired calendar library. Mandatory.</p> <p>If you make an entry in this field without filling in the CALENDAR field, the list of calendars in the selected library is displayed in the Calendar List screen.</p> <p>If you make an entry in this field, you can restrict the list of calendars that are displayed by entering in the CALENDAR field part of a Calendar name together with a mask character or characters (? and *).</p>
CALENDAR	<p>Name of the desired calendar member. Optional.</p> <p>If an entry is made in this field without filling in the YEAR field, the list of years in the selected calendar member is displayed in the Year List screen.</p>

Table 121 Fields of the IOA Calendar Facility Entry Panel (part 2 of 2)

Field	Description
YEAR	Year of the desired calendar definition. Optional. This field can be used only if a CALENDAR value is also entered. If specified, the calendar definition is displayed in the Calendar Definition screen.

NOTE

If you use the selection list fields, their values are not erased until you exit the entry panel by pressing **END (PF03/PF15)**.

Calendar List Screen

The Calendar List screen displays a list of calendars (members) in the selected library. This screen can be entered directly from the entry panel or upon exiting the Year List screen.

By default, only calendar names are listed in the screen. However, if the default has been modified at time of installation, statistical information is displayed for each calendar name, as shown in [Figure 97](#).

Figure 97 Calendar List Screen

CALENDARS IN LIB IOA.PROD.CAL									
COMMAND ==>									
----- (8.D)									
SCROLL==> CRSR									
OPT	NAME	-----	VV.MM	CREATED	CHANGED	SIZE	INIT	MOD	ID
	BANKDAYS		01.00	02/01/28	01/06/29 09:50	104	104	0	IOAPROD
	DAYSOFF		01.00	02/01/28	01/06/29 09:50	30	30	0	IOAPROD
	HOLIDAYS		01.00	02/01/28	01/06/29 09:50	15	15	0	IOAPROD
	PERIOD10		01.00	02/01/28	01/06/29 09:50	45	45	0	IOAPROD
	SACAYCLN		01.01	02/01/28	01/11/29 17:43	26	26	0	L3051
	SPMONCLN		01.01	02/01/29	01/11/30 15:00	117	104	0	M16A
	SPWEKCLN		01.01	02/01/29	01/11/30 15:10	117	104	0	M16A
	STOCKDAY		01.00	02/01/30	01/06/31 09:50	45	45	0	IOAPROD
	WORKDAYS		01.01	02/01/30	01/11/31 17:43	26	26	0	L3051
===== >>>>>>>>>>>>>>>> NO MORE CALENDARS IN LIBRARY <<<<<<<<<<<<<<<< =====									
OPTIONS: S SELECT B BROWSE D DELETE									
13.54.14									

To return to the entry panel, press END (PF03/PF15).

Options of the Calendar List Screen

To request one of the following options, type the option in the OPT field to the left of the calendar names, and press **Enter**.

Table 122 Options of the Calendar List Screen

Option	Description
S (SELECT)	Display the list of years for the calendar for any purpose, including editing or modification. Only one calendar can be selected at a time.
B (BROWSE)	Display the list of years for the calendar for browsing. Only one calendar can be selected at a time.
D (DELETE)	Delete the calendar (member) from the library. Multiple calendars can be selected.

Year List Screen

The screen displays the list of years for which a specified calendar is defined. This screen can be entered directly through the entry panel or the Calendar List screen, or upon returning from the Year Definition screen.

NOTE



If the S (Select) option was entered in the Calendar List screen for a calendar that is currently in use (selected) by another user, either the Year List screen is not displayed and the Calendar List screen remains displayed (the default), or the Year list screen is displayed in Browse mode (if a user profile definition overrides the default). In either case, an appropriate message is displayed.

If a calendar description was defined in the Calendar Definition screen, the definition is displayed to the right of the year.


```

LIST OF YEARS IN IOA.PROD.CAL                                CALENDAR WORKDAYS
COMMAND ==>                                                SCROLL==> CRSR
OPT  YEAR  ----- DESCRIPTION -----
      2001      REGULAR WORKING DAYS IN 2001
      2002      REGULAR WORKING DAYS IN 2002
      2003      REGULAR WORKING DAYS IN 2003
      2004      REGULAR WORKING DAYS IN 2004
      2005      REGULAR WORKING DAYS IN 2005
===== >>>>>>>>>>>>>>>> NO MORE YEARS IN CALENDAR    <<<<<<<<<<<<<<<< =====

OPTIONS: S SELECT    D DELETE    I INSERT    W INSERT BY WEEK DAYS    C COPY 08.52.54

```

Commands of the Year List Screen

The following commands can be entered in the COMMAND field of the Year List screen.

Table 123 Commands of the Year List Screen

Command	Description
DESC	The DESC command displays the calendar description next to the year. The description is taken from the DESCRIPTION field in the calendar definition.
STAT	The STAT command displays the following ISPF-like statistical information about the calendar next to the year: version and modification numbers, creation date, last modification date, and user ID.

Options of the Year List Screen

To request one of the following options, type the option in the OPT field to the left of the year and press **Enter**.

NOTE



If the Year List screen is displayed in Browse mode, options D (Delete), I (Insert), and W (Insert By Week Days) are not available.

Table 124 Options of the Year List Screen (part 1 of 2)

Option	Description
S (SELECT)	Display the calendar definition for the specific year. Parameters can be edited and updated only if the Calendar Definition screen is not displayed in Browse mode. If the Calendar Definition screen is displayed in Browse mode, the screen can only be browsed and parameters cannot be modified.
D (DELETE)	Delete the calendar definition for the specified year.
I (INSERT)	Insert a new year in the Year List screen and display the Calendar Definition screen with a predefined year definition for editing. The predefined calendar definition is defined with the same dates as the year next to which the I (Insert) request was specified. For more information, see “Inserting a New Year” on page 243 .

Table 124 Options of the Year List Screen (part 2 of 2)

Option	Description
W (INSERT BY WEEK DAYS)	Insert a new year in the Year List screen and display the Calendar Definition screen for editing a predefined year definition. The predefined year definition is defined with the same days of the week as the year next to which the W (Insert by Week Days) request was specified. For more information, see “Inserting a New Year.”
C (COPY)	Copy the year to another calendar, as described in “Copying Years to Another Calendar” on page 244. Multiple years can be selected.

Inserting a New Year

All calendar definitions identified in the same Year List usually have the same fixed scheduling pattern. Often, this scheduling pattern is based either on dates within a month or on days of the week within the month. For example:

- Calendar QUARTERLY might always indicate scheduling for the last day of March, June, September and December (that is, a scheduling pattern based on dates).
- Calendar WEEKEND might always indicate scheduling all Saturdays and/or Sundays in each month (that is, a scheduling pattern based on days of the week).

This scheduling pattern also applies to new calendar definitions resulting from the insertion of a new year in the Year List screen.

When a year is inserted in the Year List, the IOA Calendar facility automatically generates a predefined calendar definition for the new year, based on the scheduling pattern of the calendar by which the insert request was specified. This frees the user from having to manually define the new calendar. This automatically generated calendar definition can be displayed and modified.

NOTE



The Year list must be kept in ascending order without missing years (for example, 2001, 2002, 2003, 2004, 2005). Each new year must be added at the end of the list.

In calendar definitions, a defined scheduling date is described by both the date (month and day) and the day of the week. Because a particular date falls on a different day of the week in different years, it is necessary to indicate whether the scheduling pattern is based on the date or on the days of the week. This is indicated by the specified insert option.

- To define the calendar with the same scheduling dates (although corresponding days of the week may vary, for example, calendar QUARTERLY described above), type option I (INSERT).

- To define the calendar so that scheduling takes place on the same weekdays as in the previous calendar (although the corresponding dates may vary, for example, calendar WEEKEND described above), type option W (INSERT BY WEEK DAYS).
- If the scheduling pattern is mixed (for example, calendar HOLIDAYS always indicates scheduling on both January 1 and the first Monday in September), specify the more appropriate option and correct the new calendar definition manually.

Copying Years to Another Calendar

Years currently displayed in the Year List screen can be copied to another calendar. To copy the desired years, type option C (COPY) next to each desired year in the screen and press **Enter**. The following window is displayed:

Figure 99 Calendar List Screen Copy Window

LIST OF YEARS IN: IOA.PROD.CAL

COMMAND ==>

CALENDAR: CALEN1

SCROLL==> CRSR

OPT	YEAR	DESCRIPTION
	2001	REGULAR WORKING DAYS IN 2001
C	2002	REGULAR WORKING DAYS IN 2002
	2003	REGULAR WORKING DAYS IN 2003
	2004	REGULAR WORKING DAYS IN 2004

SPECIFY DESTINATION LIBRARY, CALENDAR AND RULE NAME

LIBRARY : IOA.PROD.CAL

CALENDAR:

YEAR : 2005

PRESS END/RESET TO CANCEL

ENTER TO PERFORM THE COPY

OPTIONS: S SELECT D DELETE I INSERT W INSERT BY WEEK DAYS C COPY 15.37.39

The window contains the following fields (some fields contain default values that can be modified):

Table 125 Fields of the Calendar List Screen Copy Window

Field	Description
LIBRARY	Library containing the calendar into which the years must be copied. Must be an existing library. Default: The current library.
CALENDAR	Name of the calendar into which the year must be copied.
	<p>Note: A year can only be copied to another calendar. It cannot be copied to its own calendar (even if the year is renamed).</p> <p>If the selected calendar does not exist in the Calendar List, the calendar is created when the request is performed.</p>
YEAR	Name of the year to be copied. If multiple years are selected, the window is initially displayed with the first selected year. As each request is performed or canceled, the next requested year name appears.

To perform a request, press **Enter**.

To cancel a request, press END (**PF03/PF15**) or RESET (**PF04/PF16**).

Calendar Definition Screen

This screen is used to define, display and modify dates in a calendar for a specific year. This screen can be entered directly from the entry panel or from the Year List screen.

Figure 100 Calendar Definition Screen

----- IOA CALENDAR - WEEKDAYS -----																									(8.Y)				
COMMAND ==>															SCROLL==> CRSR														
YEAR 2002										REGULAR WORKDAYS IN 2002																			
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1																													
01		Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y												
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8																													
02		Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y												
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1																													
03		Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y												
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 +																													
04		Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y															
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1																													
05		Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y															
-----S-----S-----S-----S-----S-----S-----																													
1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 +																													
06		Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y			Y Y Y Y Y															
-----S-----S-----S-----S-----S-----S-----																													
TYPE Y IN ALL THE EXECUTION DAYS																									14.37.10				

Fields of the Calendar Definition Screen

Table 126 Fields of the Calendar Definition Screen

Field	Description
YEAR	Year of the calendar. This value can be modified. When modified, the values indicated for each date in each month (described below) are shifted to the appropriate day of the week.
description	User-supplied, free text description of the calendar. Optional.
month/dates	Each month of the year (01 through 12) of the calendar consists of the following: <ul style="list-style-type: none">■ Separator line. Sunday (or Saturday) is marked “S” (according to the default at your site).■ Month label (01 through 12).■ Date label for the day of the month.■ Updatable field for defining execution dates. Valid values are:<ul style="list-style-type: none">■ Y (Yes) – Select the rule on that date.■ N (No) or ' ' (Blank) – Do not select the rule for execution on that date.■ + – For a relative calendar, select the closest next “date.”■ - - For a relative calendar,^a select the closest previous “date.”

^a A relative calendar is a calendar used in a formula to create other calendars. It cannot be specified in a DCAL, WCAL, or CONFCAL field. For details, see the description of the IOABLCAL utility in the *INCONTROL for z/OS Utilities Guide*.

Periodic Calendars

Some rules must be scheduled periodically, according to schedules that are not easily expressed in terms of fixed days and dates within months. In these cases, monthly, or even yearly, scheduling definition is awkward. For example:

- A payroll rule needs to be scheduled every other Wednesday:
 - In some months, the rule may be scheduled on the first, third, and even fifth Wednesday in the month. In other months, it may be scheduled on the second and fourth Wednesday in the month.
 - In some years, the rule may be scheduled beginning on the first Wednesday of the year. In other years, it may be scheduled beginning on the second Wednesday of the year.
- A rule must be scheduled every 25 days, regardless of date. Such a rule is scheduled on different dates each month and each year.

The IOA Calendar facility provides special calendars, called periodic calendars, to allow specification of these scheduling requirements. These periodic calendars are very flexible.

To designate a calendar as periodic, you must type reserved string `==PERIODIC==` in the first 12 positions of the description field. Any text can be entered in the rest of the description field. This is illustrated in the following figure.

Figure 101 Use of Reserved String "==PERIODIC=="

COMMAND ==>	SCROLL==> CRSR
YEAR 2004 -	==PERIODIC== GENERAL WORKDAY CALENDAR

The following are characteristics of periodic calendars:

- In a periodic calendar, days are not marked using the letters Y (Yes) or N (No). Instead, a period identifier is used to mark working days in a period. A period identifier can be any letter from A to Z (except Y and N), any number from 0 to 9, or any other printable sign. If you need more characters, use characters falling within the hexadecimal range 4A through F9. All working days within the same period must be marked using the same period identifier character so that different identifier characters indicate different periods. Days that are not marked are nonworking days because they do not belong to any period in this calendar.
- Identifiers from different periods can be interspersed throughout a periodic calendar.
- A periodic calendar can consist of smaller units that do not correspond to regular months, in that they can be longer or shorter than regular months.

- A periodic calendar can span a period, called a “logical year”, which can be longer or shorter than one regular calendar year.
- When a periodic calendar spans parts of two regular calendar years, special considerations are likely to arise. For more information, see “[Special Year-End Handling of Periodic Calendars](#)” on page 249.
- A period can span any number of days, but no more than a preset number of days can elapse after the appearance of one identifier in a period until the appearance of the next matching identifier in the same period. After that period expires, the next matching identifier starts a new period.

By default, this period is preset to 33 days. Once the length of the gap between matching identifiers exceeds 33 days, the period automatically closes.

NOTE



The length of the default period can be changed from 33 days by the INCONTROL administrator, using optional Wish WM2888.

For more information on the use of periodic calendars, see “[DAYS: Basic Scheduling Parameter](#)” on page 276 and “[WDAYS: Basic Scheduling Parameter](#)” on page 386.

Examples

The following are examples of periodic calendars:

Figure 102 Periodic Calendar – Example 1

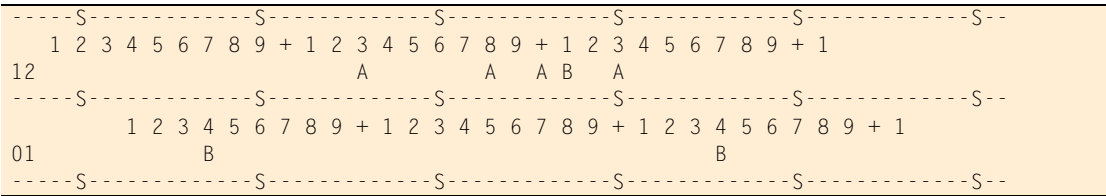


Figure 103 Periodic Calendar – Example 2

-----S-----S-----S-----S-----S-----S-----	
03	1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1
	B A B A
-----S-----S-----S-----0-----S-----S-----S-----	
04	1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 + 1 2 3 4 5 6 7 8 9 +
	B
-----S-----S-----S-----S-----S-----S-----	

This example includes a period B that begins on March 9. The last marked working day of the period is March 21, which is followed by a 33-day gap. Assuming that Wish WM2888 has not been used to alter the default period of 33 days, period B automatically ends on April 23, and April 24 marks the beginning of a new period B. If no more B identifiers are added, this new B period ends on May 27.

Special Year-End Handling of Periodic Calendars

Rules, jobs, or missions may be improperly scheduled if a periodic calendar contains one or more periods that start in one year and continue into the next year, under the following circumstances:

- If the default gap between occurrences of matching identifiers has been changed from 33 days to a longer period
and
- If the first occurrence of the matching identifier in one logical year falls within the default gap that began at the last occurrence of the matching identifier in a prior logical year

In such cases, the period in the prior logical year overlaps the period in the later logical year, causing a scheduled rule not to run in the later logical year as expected.

To avoid this problem, remove logical years from periodic calendars as soon as they are no longer needed.

Example

- Logical year FISCAL01 extends from April 1, 2001 through March 31, 2002.
- Logical year FISCAL01 contains a period identified as Period A that has been defined to begin on December 28, 2001 and to continue through January 15, 2002.
- Logical year FISCAL02 extends from April 1, 2002 through March 31, 2003.
- Logical year FISCAL02 also contains a period identified as Period A, defined to begin on April 20, 2002 and continue through May 3, 2002.

- Rule X is scheduled for the seventh day of Period A in each logical year, through the rule definition DAYS=D7PA.

In a case where the default gap being 33 days, Rule X runs in January 2002, and again in April 2002, as expected.

In a case where the default gap is changed from 33 to a longer period, such as 120 days, the first day of Period A in logical year FISCAL02 occurs less than 120 days after the last appearance of Period A in logical year FISCAL01. As a result, what appears to be the seventh day in Period A in April 2002 is not recognized as such, because the “old” Period A overlaps the “new” Period A. Consequently, Rule X does not run again when the user may have expected it to run.

Deleting Calendars

To delete calendars, type option D next to the calendar names in the Calendar List screen and press **Enter**.

The following confirmation window is displayed, in sequence, for each calendar selected for deletion.

Figure 104 Calendar List Screen Delete Confirmation Window

CALENDARS IN LIB IOA.PROD.CAL									
COMMAND ==>									
------(8.D)									
+-----+ SCROLL==> CRSR									
OPT	NAME	---	CONFIRM DELETE OPTION			E	INIT	MOD	ID
			(Y/N)						
D	BANKDAYS	<-----				4	104	0	IOAPROD
	DAYSOFF		+-----+			0	30	0	IOAPROD
	HOLIDAYS		01.00	02/01/28	01/06/29 09:50	15	15	0	IOAPROD
	PERIOD10		01.00	02/01/28	01/06/29 09:50	45	45	0	IOAPROD
D	SACAYCLN		01.01	02/01/28	01/11/29 17:43	26	26	0	L3051
	SPMONCLN		01.01	02/01/29	01/11/30 15:00	117	104	0	M16A
	SPWEKCLN		01.01	02/01/29	01/11/30 15:10	117	104	0	M16A
	STOCKDAY		01.00	02/01/30	01/06/31 09:50	45	45	0	IOAPROD
	WORKDAYS		01.01	02/01/30	01/11/31 17:43	26	26	0	L3051
===== >>>>>>>>>>>>>>>> NO MORE CALENDARS IN LIBRARY <<<<<<<<<<<<<<<< =====									
OPTIONS: S SELECT D DELETE I INSERT W INSERT BY WEEK DAYS C COPY 13.54.14									

Type Y (Yes) in the window to delete the calendar.

Type N (No) in the window to cancel the delete request.

**NOTE**

If PDSMAN is operational at your site, \$\$\$SPACE members are not deleted.

For each calendar deleted, a message is written to the IOA Log file.

Exiting the IOA Calendar Facility

When exiting the IOA Calendar facility, screens are exited in the following sequence:

1. Calendar Definition screen
2. Year List screen
3. Calendar List screen

**NOTE**

If the Calendar List screen was bypassed as you entered the IOA Calendar facility (that is, if you entered a CALENDAR value in the entry panel), the Calendar List screen is not displayed upon exiting the Year List screen; instead, the entry panel is displayed.

Calendar Facility Entry Panel

The commands and options available when exiting screens depend on the screen being exited and on whether changes have been made. If changes have been made, the selected exit options and commands determine whether the changes are saved. Exit options and commands are discussed below on a screen by screen basis.

Exiting the Calendar Definition Screen

Use any of the following commands, or press the corresponding PFKey, to exit the Calendar Definition screen:

Table 127 Commands for Exiting the Calendar Definition Screen (part 1 of 2)

Command	Description
CANCEL	Cancel the changes made to the calendar definition and return to the Year List screen.
Note: The following exit commands retain changes to the calendar definition in memory. To permanently save the changes to disk, you must also request that the changes be saved when you exit the Year List screen.	

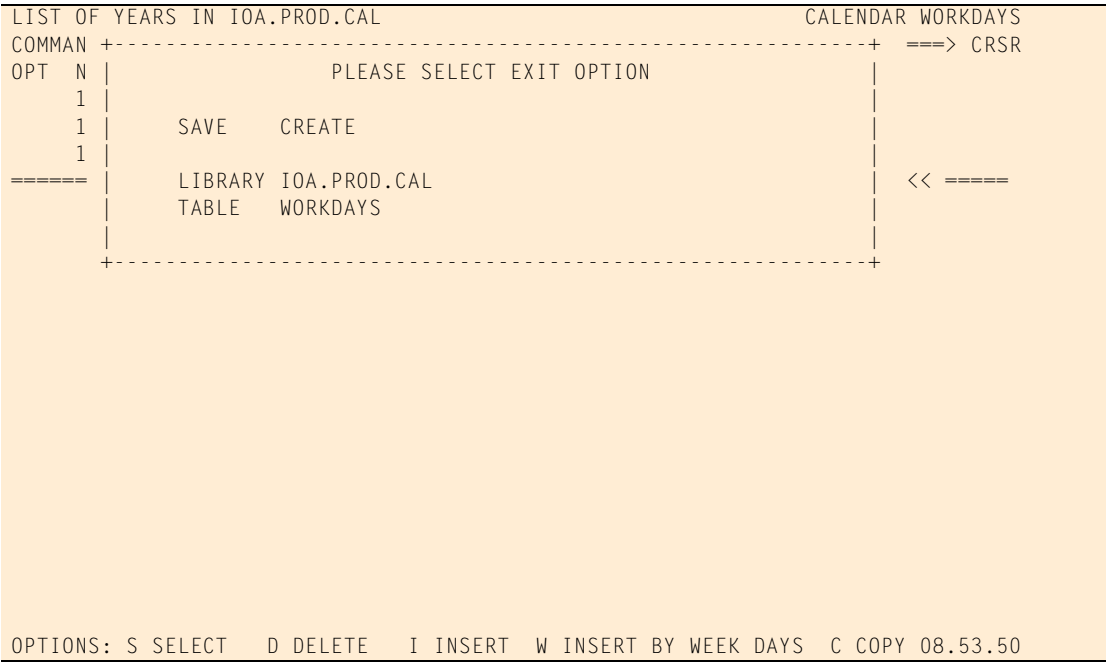
Table 127 Commands for Exiting the Calendar Definition Screen (part 2 of 2)

Command	Description
END (PF03/PF15) Enter	Keep changes to the calendar definition in memory and exit to the Year List screen.
NEXTYEAR (PF11/PF23)	Keep changes to the calendar definition in memory and display the next calendar definition in the Year List screen.
PREVYEAR (PF10/PF22)	Keep changes to the calendar definition in memory and display the previous calendar definition in the Year List screen.

Exiting the Year List Screen

Press END (PF03/PF15) to exit the Year List screen. If changes made to at least one calendar definition have been kept in memory or if any changes have been made to the Year List screen, the Exit Option window is displayed. For more information, see “Exiting the Calendar Definition Screen” on page 251.

Figure 105 Year List Screen Exit Option Window



Fill in the Exit Option window as follows:

The LIBRARY and TABLE (member) fields indicate the library and member in which the calendar definitions must be saved. The specified values can be modified (for example, to save the calendar definitions in a different member).

- To save all changes currently in memory and exit the Year List screen, type Y (Yes) after the word SAVE or CREATE:
 - Type Y after the word SAVE if a member with the same calendar name already exists in the specified library.
 - Type Y after the word CREATE if a member with the same calendar name does not exist in the specified library.



NOTE

If you create a new calendar member, the member name does not appear in the Calendar List screen upon exiting the Year List screen; it first appears when you reenter the Calendar List screen from the entry panel.

- To cancel changes currently in memory and exit the Year List screen, type N (No) after the word SAVE or CREATE.
- To close the Exit Option window and remain in the Year List screen (with the changes remaining in memory), press RESET (PF04/PF16).

Exiting the Calendar List Screen

Press END (PF03/PF15) to exit the Calendar List screen.

Exiting the IOA Calendar Facility Entry Panel

Press END (PF03/PF15) to exit the entry panel.

Utilities Under ISPF

Several IOA facilities can only be activated under ISPF. To activate these facilities, select option 6 on the IOA Primary Option menu (under ISPF) or invoke the IOAUTIL CLIST from the TSO Command Processor. The IOA Online Utilities menu is displayed.



NOTE

The INCONTROL administrator can remove user authority to access option 6 on the IOA Primary Option menu. In this case, the IOA Online Utilities menu is not displayed.

IOA Online Utilities Menu

Depending on the INCONTROL products that are available at your site, different online utility options are displayed in the On-line Utilities menu. [Figure 106](#) shows the IOA On-line Utilities menu that is displayed when all applicable INCONTROL products are active.

Figure 106 IOA Online Utilities Menu when all INCONTROL Products are Installed

----- ON-LINE UTILITIES -----		
		USERID - N06
		TIME - 13:40
		TERMINAL - 3278
D1	DECOLLATING	- Schedule a Report Decollating Mission
D2	PRINT	- Schedule a Printing Mission
D3	BACKUP/MIGRATION	- Schedule a Backup/Migration Mission
D4	RESTORE	- Schedule a Restore Mission
I1	PREREQ CONDITION	- Add/Check/Delete a Prerequisite Condition
M1	JOB ORDER ISSUE	- Issue a Job Order
M2	AUTOEDIT SIMUL	- Perform an AutoEdit Simulation
M3	SIMUL/TAPE PULL	- Prepare Simulation/Tape Pull List Job
M4	PARAM PROMPTING	- Parameter Prompting Facilities
M5	QUICK SCHEDULE	- Quick Schedule Definition
M6	USER INTERFACE	- End-User Job Order Interface
R1	CTM/RESTART SIM	- CONTROL-M/Restart Simulation
R2	DATASET CLEANUP	- CONTROL-M/Restart Dataset Cleanup
R3	JOB DATASET LIST	- Prepare a Job Dataset List
R4	STANDALONE	- CONTROL-M/Restart Standalone
T1	CONTROL-M/Tape SIMUL	- Simulate CONTROL-M/Tape Rules
X	EXIT	- Exit This Menu
OPTION ==>		

NOTE



If DOCU/TEXT has also been installed at your site, an additional utility, option U1, is displayed in the Online Utilities menu.

To access an available utility, type the desired option number in the OPTION field and press **Enter**.

Options I1 and T1, which are also available when CONTROL-M/Tape is installed as a standalone product are described on the following pages. For the descriptions of other utilities on the menu, see the user guides of the relevant products.

Online utilities utilize standard ISPF profile capabilities.

Quick transfer to a utility can be performed by specifying =opt from another utility screen, or =6.opt from a non-utility screen, such as Log screen, where opt is the option in the Online Utilities menu.

I1: Add/Check/Delete a Prerequisite Condition

This utility adds prerequisite conditions to, checks the existence of prerequisite conditions in, and deletes prerequisite conditions from, the IOA Conditions file.

The Prerequisite Condition Utility screen, shown in [Figure 107](#), can be displayed in the following ways:

- Select option I1 in the Online Utilities menu.
- Invoke the IOACCND CLIST from the TSO Command Processor screen.

Figure 107 Prerequisite Condition Utility Screen

```

----- PREREQUISITE CONDITION UTILITY -----
COMMAND ==>>

FUNCTION          ==>> ADD                      (ADD/CHECK/DELETE)

CONDITION NAME    ==>> SALARY_RPT_OK

Enter either date or STAT:

CONDITION DATE    ==>> STAT                      (DDMM OR STAT)

ENTER YES TO CONTINUE ==>> YES
  
```

To activate the utility, fill in the following fields and press **Enter**:

Table 128 Prerequisite Condition Utility Screen Fields (part 1 of 2)

Field	Description
FUNCTION	Function to be performed. Valid values are: <ul style="list-style-type: none"> ■ ADD – Add the specified condition to the IOA Conditions file. ■ CHECK – Check if the specified condition exists in the IOA Conditions file. ■ DELETE – Delete the specified condition from the IOA Conditions file.
CONDITION NAME	Name of the prerequisite condition (1 through 39 characters) to be added, checked, or deleted. If CONDITION NAME values contain the special characters ampersand (&) or apostrophe ('), they must be repeated in order to appear on the screen.

Table 128 Prerequisite Condition Utility Screen Fields (part 2 of 2)

Field	Description
CONDITION DATE	4-character date associated with the specified condition. Valid values are: <ul style="list-style-type: none">■ <i>date</i> – Valid date in date in <i>mmdd</i> or <i>ddmm</i> format, depending on the site standard.■ <i>STAT</i> – Static. Value assigned to conditions that are not date-dependent, such as DATABASE-OK.
ENTER YES TO CONTINUE	Confirmation field to prevent the unintentional addition or deletion of a condition. When blank, the operation is not performed. Type YES to add, check or delete the condition.

To exit the screen without activating the utility, press **PF03/PF15**.

T1: Simulate CONTROL-M/Tape Rules

This utility simulates CONTROL-M/Tape rule processing when a particular job is run. It enables you to check which rules are processed when the job is run, and the results of that rule processing. It is recommended that this utility be used when inserting new rules (to check that they are processed and that they perform as expected), or to understand existing rules whose functions are unclear.

The utility shows which DO blocks were performed and from which rules these DO blocks were taken.

The utility screen can be displayed in the following ways:

- Select option T1 on the Online Utilities menu.
- Activate CLIST CTTCRSS from the TSO Command Processor.

Figure 108 CONTROL-M/Tape Rule Search Simulation Screen

```

----- CONTROL-M/TAPE RULE SEARCH SIMULATION -----
COMMAND ===>

PLEASE FILL IN SEARCH CRITERIA:

DATASET          ===>

JOBNAME          ===>

VOLSER           ===>

ACCOUNT          ===>

USERID           ===>

MEDIA            ===>

UCB              ===>

MGMTCLAS         ===>

JCLEXPDT         ===>          (YYDDD)
                                or (YYYY/DDD)

PGM              ===>

-----

LOAD NEW RULES    ===> Y (Y/N)      RULLIST ===> RULLIST
LOGICAL DATE      ===>              (Loading rules date, YYYYMMDD)
FUNCTION          ===> BROWSE       (BROWSE/EDIT search results)

F1=HELP    F2=SPLIT  F3=END    F4=RETURN  F5=RFIND  F6=RCHANGE
F7=UP      F8=DOWN   F9=SWAP   F10=LEFT   F11=RIGHT  F12=keys

```

The screen is divided into two sections. The first section provides job run information that CONTROL-M/Tape would gather if the particular job was run (DATASET, JOBNAME, and so on). The utility uses information supplied in this section to select and activate rules.

NOTE



The meaning of these fields (except JCLEXPDT) is explained in “ON Statement” in Chapter 3. JCLEXPDT is the JCL expiration date in Julian format.

- Fill in the parameters above the line in the screen. Information not required by any rules can be omitted. Character masking is not permitted.
- Fill in the parameters below the line, as follows:

Table 129 CONTROL-M/Tape Rule Search Simulation Parameters

Parameter	Description
LOAD NEW RULES	Whether to load a new rule list. Valid values are: <ul style="list-style-type: none">■ Y (Yes) – Simulate the rules in the rule list member specified in the field RULLIST.■ N (No) – Simulate the rules that are currently active.
RULLIST	Name of member containing the rule list to be loaded when LOAD NEW RULES equals Y. The member is taken from the PARM library.
LOGICAL DATE	Simulated date on which to load rules. Used only when the loading of new rules is requested if rules exist that are ordered only on specific dates.
FUNCTION	Whether to browse or to edit the utility's output (search results).

To activate the utility, specify YES at the bottom of the screen and press **Enter**.

Rule Parameters

This chapter includes the following topics:

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Selection Parameters	263
Action Parameters	263
And/Or Subparameter Logic	265
ON/DO Block Structures	265
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General

Each rule in CONTROL-M/Tape consists of a rule definition, and each rule definition consists of rule parameters. Rule parameters specify the rule's various instructions and selection criteria.

Rule definitions can be defined by the Rule Definition facility using preformatted screens.

BMC Software recommends that all CONTROL-M/Tape users read the description of the Rule Definition facility in [Chapter 2, “Online Facilities”](#) before reading this chapter.

Figure 109 CONTROL-M/Tape Rule Definition Screen

[illegible]

All rule definitions are stored in members in standard user libraries. The CONTROL-M/Tape term for a member of this type is "table." Each table is composed of definitions for a number of different rules, all of which usually relate to the same subject. Table maintenance within the library, and management of the rules within each table is carried out using the Rule Definition facility.

The parameters that can be specified for each rule fall into four basic categories:

Table 130 Parameter Categories

Category	Description
A.	General Parameters – basic information about the rule.
B.	Selection Parameters – selection conditions (the ON block).
C.	Action Parameters – actions to be performed (the DO block).
D.	Scheduling Parameters – dates to activate the rule.

Categories A, B, and C are mandatory. Category D is optional.

This chapter presents a quick summary of the parameters in each of the categories listed above.

The summary is followed by a detailed description of each rule definition parameter (in alphabetical order).

NOTE



Before reading about ON block or DO block parameters (categories B and C above), read “ON/DO Block Structures” in this chapter.

Rule Parameters – Summary

General Parameters

General parameters provide basic information about the rule.

Table 131 General Parameters (part 1 of 2)

Parameter	Description
RULE NAME	Name of the rule.
GROUP	Group to which the rule is assigned.
MODE	CONTROL-M/Tape rule operation mode for the rule.
OWNER	User ID of user who created the rule.
SEQUENCE PRIORITY	Internal rule scanning priority.
CONTINUE SEARCH	Indicates whether to continue searching for additional rules if this rule meets the selection criteria.

Table 131 General Parameters (part 2 of 2)

Parameter	Description
DESCRIPTION	Description of the rule (free text).
DOCMEM	Name of the member containing documentation of the rule.
DOCLIB	Name of the library containing documentation of the rule.

Selection Parameters

Selection parameters specify the criteria (the ON block) under which actions are performed by CONTROL-M/Tape. Each rule must contain one, and only one, ON block. The ON block can contain an unlimited number of ON statements joined by parameter And/Or/Not.

Table 132 Selection Parameters

Parameter	Description
ON statement	Data sets and volumes whose access triggers the rule. The rule is performed on these data sets and volumes.
And/Or/Not	Conjunctural parameter for linking ON statements.

For a detailed description of valid ON statements, see “ON statement” in this chapter.

Action Parameters

Action parameters (meaning, DO parameters) specify actions to be performed by CONTROL-M/Tape. These actions are performed only after conditions specified in the selection parameters have been fulfilled.

The following actions, described in detail on the following pages, are supported:

Table 133 Action Parameters (part 1 of 2)

Parameter	Description
DO ABENDRET	Specifies how long the data set or volume is retained if an abend occurs while the data set is open.
DO BYPASS	Indicates whether CONTROL-M/Tape should bypass tape management activities for the data set.
DO CONDITION	Adds or deletes prerequisite conditions.
DO DYND	Indicates whether a data set is dynamically added to the Media Database.

Table 133 Action Parameters (part 2 of 2)

Parameter	Description
DO DYNVOL	Indicates whether a volume is dynamically added to the Media Database.
DO FASTPOS	Indicates whether CONTROL-M/Tape should request Fast Positioning for a tape.
DO FORCEJOB	Forces (schedules) a jobs under CONTROL-M.
DO LABEL	Determines whether an external (gummed) label is printed upon creation of the data set.
DO OVERJCL	Indicates whether MVS retention attributes for the data set is overridden by CONTROL-M/Tape rules.
DO OWNER	Assigns an owner to the volumes and data sets.
DO POOL	Indicates the pool from which scratch volumes are taken.
DO RECREATE	Indicates whether an existing data set is overwritten by the data set.
DO RESOURCE	Modifies the quantity of Quantitative resources.
DO RETENTION	Specifies how long the data set or volume is retained.
DO SET	Assigns a value to an IOA AutoEdit variable.
DO SHOUT	Issues a message to a console, TSO user ID, ROSCOE user, IOA Log, or Info/Management.
DO STACK	Enables or disables stacking of data sets.
DO STKDEFSZ	Indicates a default size for the data set if it is to be stacked.
DO STKGROUP	Indicates a stacking group for the data set.
DO STKMODE	Indicates a method to be used for stacking the data set.
DO STKMXLBL	Indicates a maximum number of data sets with which the data set can be stacked on one volume.
DO STKMXVOL	Indicates the maximum number of volumes in a chain on which the data set can be stacked.
DO STKRULE	Indicates a stacking limitation for the data set.
DO STKSRLHL	Indicates a maximum number of volumes that can be considered for stacking the data set.
DO VAULT	Identifies name, location and retention specifications of a vault for volume storage.

It is possible to create a rule without specifying any Action parameters. One use for a rule without DO actions is to change the CONTROL-M/Tape operation mode without performing other actions.

Action parameters are divided into the following categories:

- Parameters unique to CONTROL-M/Tape (for example, DO ABENDRET, DO LABEL, DO OWNER, DO POOL, DO RETENTION, DO STACK, and DO VAULT).
- Other DO parameters (meaning, DO CONDITION, DO FORCEJOB, DO RESOURCE, DO SET, and DO SHOUT) interface with and/or are common to the INCONTROL family of products.

And/Or Subparameter Logic

And/Or is a conjunctive subparameter that permits the specification and linking of some of the subparameters specified with some of the DO parameters described in the following pages. Valid values:

Table 134 And/Or Subparameter Values

Value	Description
A (And)	Both linked subparameters must have the value specified in the corresponding fields in the DO parameter for the action to take place.
O (Or)	At least one of the linked subparameters must have the value specified in the field in the DO parameter for the action to take place.

ON/DO Block Structures

Selection parameters and Action parameters are specified as blocks of information (parameters).

The ON block determines which volumes and/or data sets, when accessed, trigger the rule (for example, all data sets created by a certain job or program). The basic structure of an ON block is:

ON	selection	And/Or/Not
ON	selection	And/Or/Not
	.	
	.	
	.	
ON	selection	

The DO block specifies which actions are performed. The basic structure of a DO block is:

DO	action
DO	action
DO	action
	.
	.
	.
DO	action

Each CONTROL-M/Tape rule is composed of General parameters, followed by one ON block and one DO block. Scheduling parameters can optionally be specified.

The structure of a simple rule is illustrated below in free format (not using CONTROL-M/Tape’s actual syntax). The rule definition parameters are described in detail in this chapter.

Table 135 CONTROL-M/Tape Rule Structure Example

Section of Rule	Expression	Explanation
GENERAL INFORMATION:	RULE=VAULT_BACKUP	Name of rule is VAULT_BACKUP.
	OWNER=M99	User ID is M99.
	DESCRIPTION="This rule stores all backup files for Department 1 in Vault A."	Description of purpose of the rule.
ON/DO BLOCK:	ON DATASET=BACKUP.* AND ON JOBNAME=DPT01*	Select backup data sets for Department 1.
	DO VAULT=A FOR 60 DAYS	Send these data sets to Vault A for two months.
	DO SHOUT	Send message to instruct the operator about the vault operation.
SCHEDULING INFORMATION:	no criteria	Perform this rule at all times without scheduling restrictions.

Basic Scheduling Parameters

Basic Scheduling parameters determine on which day a rule can be loaded into the Real-time environment. For more details on the Real-time environment, refer to chapter 4.

There are several different Basic Scheduling parameters and subparameters, each providing a different method of expressing a rule’s schedule. Each rule definition can use any one or several of these parameters, depending on scheduling requirements.

Based on the rule’s Basic Scheduling parameters, the New Day procedure determines whether the rule is a candidate for execution on a specific date. Valid parameters are:

Table 136 CONTROL-M/Tape Basic Scheduling Parameters

Parameter	Description
DAYS	Days of the month to activate the rule.
WDAYS	Days of the week to activate the rule – Sunday, Monday, and so on.
MONTHS	Months to activate the rule.
DATES	Dates to activate the rule – day and month.
CONFCAL	Name of a user-defined calendar that is used for validating schedules.

Each Basic Scheduling parameter is described in detail in this chapter. However, the interrelationships between some of these parameters is described briefly below.

DAYS/DCAL, WDAYS/WCAL

These parameters are all optional.

Parameter DAYS identifies days of the month on which the rule is scheduled. For example, 1st day of the month, 3rd working day of the month, and so on. Several formats are available for specifying DAYS values.

Parameter WDAYS identifies days of the week on which the rule is scheduled. For example, the 1st day of the week, the 2nd working day of each week, and so on. Several formats are available for specifying WDAYS values.

A calendar name can be specified in the DCAL and/or WCAL fields. A calendar specifies days of the year on which a rule can be scheduled, known as working days. For more information on calendars and the IOA Calendar Facility, see [“IOA Calendar Facility” on page 236](#).

When both the DAYS and DCAL parameters are specified, a date must appear in both parameter specifications for scheduling to result.

Similarly, when both WDAYS and WCAL are specified, a day must appear in both parameter specifications for rule scheduling to result.

When values for both DAYS (/DCAL) and WDAYS (/WCAL) are specified in the same rule definition, the resulting schedule is determined by the value specified in field AND/OR.

CONFCAL/SHIFT

A calendar specified in parameter CONFCAL is not used for rule scheduling, but is used instead for validating a schedule date. Only rules that have satisfied all other specified basic scheduling criteria are checked against the CONFCAL calendar. If the day is a working day in the CONFCAL calendar, the rule is scheduled on that day. Otherwise, the rule is either shifted to (scheduled on) another day according to the value specified in parameter SHIFT, or the rule is not scheduled (if no SHIFT value has been specified).

CONFCAL calendars are useful for handling holidays and other scheduling exceptions.

Defining a Schedule – Internal Scheduling Logic

The following logic is used by the IOA Scheduling facility to determine whether to order a rule on a specific day:

1. DAYS/DCAL parameters are checked independently and a first tentative scheduling decision is created.
2. WDAY/WCAL parameters are checked independently and a second tentative scheduling decision is created.
3. A third scheduling decision is created based on the above two decisions and the AND/OR value linking them.

If DAYS/DCAL are not specified, the third scheduling decision is identical to the second scheduling decision. If WDAY/WCAL are not specified, this third scheduling decision is identical to the first scheduling decision.

4. If CONFCAL/SHIFT are specified, the third scheduling decision is adjusted according to the CONFCAL/SHIFT criteria.
5. The third scheduling decision (as adjusted, if necessary) becomes the final scheduling decision. The IOA Scheduling facility decides whether to schedule a rule based on this third scheduling decision.

Parameter Descriptions

This section contains detailed descriptions of all parameters available in the CONTROL-M/Tape Rule Definition screen. Parameters are arranged in alphabetical order. Within each parameter, subparameters are arranged according to the order of the fields on the screen.

Each parameter begins on a new page, and includes the following:

- a brief explanation of the parameter's purpose
- the format required for defining the parameter within an extract of the CONTROL-O screen
- general information explaining the parameter and its usage
- where applicable, some practical examples illustrating implementation of the parameter

For more information on the Rule Definition facility, see [Chapter 2, "Online Facilities."](#)

CONFICAL: Basic Scheduling Parameter

Specifies the name of a calendar that is used to confirm whether a rule that is scheduled for a particular day according to other scheduling criteria, is either scheduled on that day, shifted to another day, or not scheduled at all.

For more information, see also DAYS and WDAYs.

Figure 110 CONFICAL Parameter Format

MONTHS

1-2-3-4-5-6-7-8-9-10-11-12-

DATES

CONFICAL

SHIFT

The CONFICAL subparameters are described below:

Table 137 CONFICAL Subparameters

Subparameter	Description
CONFICAL	<p>Valid calendar (member) name of 1 through 8 characters.</p> <p>A calendar specified in CONFICAL is not used for rule scheduling, but is used instead for validating schedule dates. Only rules to be scheduled on a day, based on other specified scheduling criteria, are checked against the CONFICAL calendar. If the day is a working day in the CONFICAL calendar, the rule is scheduled on that day. Otherwise, subparameter SHIFT determines whether the rule is shifted to (scheduled on) another day or is not scheduled.</p>
SHIFT	<p>When a rule fails confirmation for scheduling on a given day because the day is not a working day in the CONFICAL calendar, SHIFT determines if and when the rule is alternatively scheduled.</p> <p>Valid values are:</p> <ul style="list-style-type: none">■ blank — No shifting occurs. The rule is not scheduled. Default.■ > — Rule is scheduled on (shifted to) the next working day, according to the CONFICAL calendar.■ < — Rule is scheduled on (shifted to) the previous working day, according to the CONFICAL calendar.

General Information

CONFICAL calendars are useful for handling holidays and other scheduling exceptions.

CONFICAL is optional. If not specified, rules are scheduled according to other basic scheduling criteria without confirmation.

CONFICAL should not contain the name of a periodic calendar. If it does, no day passes the confirmation.

SHIFT cannot be specified unless CONFICAL is specified, and when CONFICAL is specified, SHIFT is optional (meaning, blank defaults to no shifting).

Example

This example is based on the following assumptions:

- The current month is September 2001.
- Working days are defined in the WORKDAYS calendar, which contains the following working days (indicated by Y) for September 2001:

---S-----S-----S-----S-----S---																													
1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+
				Y	Y	Y	Y			Y	Y	Y	Y	Y		Y	Y	Y	Y		Y	Y	Y	Y	Y				

- Start of the week is defined as Monday. Weeks start on the following dates in September: 3rd, 10th, 17th, and 24th.

Schedule the rule on the 1st, 7th and 15th day of the month if they are both Saturdays and working days in WORKDAYS. If the day of the month (1st, 7th, 15th) is not a Saturday, do not schedule the rule. If the day of the month is a Saturday but is not a working day, schedule the rule on the next working day.

DAYS	-	1,7,15
AND/OR	-	AND
WDAYS	-	6
CONFICAL	-	WORKDAYS
SHIFT	-	>

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 111 CONFICAL Parameter Example

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU
			*													*													

CONTINUE SEARCH: General Parameter

Determines whether to continue searching for additional rules if this rule meets the selection criteria.

Figure 112 CONTINUE SEARCH Parameter Format

RULE NAME

GROUP

MODE

(Prod/Test)

OWNER

SEQUENCE PRIORITY

CONTINUE SEARCH

(Y/N)

DESCRIPTION

DOCMEM

DOCLIB

Mandatory. Valid values are:

Table 138 CONTINUE SEARCH Values

Value	Description
Y (Yes)	Continue search for rules with matching selection criteria. CONTROL-M/Tape continues to search for matching rules until a matching rule is found in which a value of N is specified for CONTINUE SEARCH, or until all possible DO actions have been performed.
N (No)	Discontinue search if this rule meets the selection criteria. CONTROL-M/Tape stops searching if this rule satisfies the selection criteria. CONTROL-M/Tape continues to search if this rule does not match the selection criteria.

Example

CONTROL-M/Tape continues searching for matching rules even if this rule satisfies the selection criteria.

Figure 113 CONTINUE SEARCH Parameter Example

RULE: JOB0099 LIB CTT.PROD.RULES			TABLE: ADM0002
COMMAND ==>			SCROLL==> CRSR

RULE NAME	JOB0099	GROUP PRODUCTION	MODE PROD (Prod/Test)
OWNER	M43	SEQUENCE PRIORITY 01	CONTINUE SEARCH Y (Y/N)
DESCRIPTION	SET VAULT	PATTERN OF JOB0099 VOLUMES	
DOCMEM	JOBDOCS	DOCLIB CTT.PROD.DOC	
=====			
ON DATASET	= *		And/Or/Not
=====			
DO VAULT	= VAULTA		
UNTIL	DATE	0101 YEAR 1999	And/Or
VAULT	= VAULTB		
UNTIL	DATE	0101 YEAR 2000	And/Or
VAULT	= MAINLIB		
UNTIL	DATE	0101 YEAR 2001	And/Or
VAULT	=		
DO CONDITION	= JOB0099_CHANGE_VAULT	ODAT +	
	AT CLOSE		
DO			
=====			
=====			
DAYS			DCAL
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT			15.49.41

DATES: Basic Scheduling Parameter

Specifies dates, by month and day, on that the rule is scheduled.

Figure 114 DATES Parameter Format

The screenshot shows a parameter configuration interface. It features a row of 12 buttons labeled '1-' through '12-' under the 'MONTHS' header. Below this is a row of 12 empty text boxes under the 'DATES' header. At the bottom, there are two fields: 'CONFCAL' followed by an empty box, and 'SHIFT' followed by an empty box.

Optional. Valid values are 4-character dates, in either mmdd or ddmm format depending on the site standard.

A maximum of 12 dates can be specified.

General Information

The rule is scheduled only on the dates specified in the dates list.

This parameter cannot be used with parameters MONTHS, DAYS, and DCAL.

To specify more than 12 dates for one rule, the dates are defined in a calendar and the calendar is specified in DCAL (or WCAL).

The relationship between DATES and WDAY/WCAL is OR. If the rule is scheduled according to the DATES parameter or according to the WDAY/WCAL combination, it is scheduled.

Examples

Example 1

Schedule a rule for the 15th of January (mmdd format):

DATES 0115

Example 2

Schedule a rule for the 21st of December and the 21st of June (ddmm format).

Figure 115 DATES Parameter – Example 2

DOCMEM	JOBDOCS	DOCLIB CTT.PROD.DOC
=====		
ON DATASET	= *	And/Or/Not
=====		
DO VAULT	= VAULTA	
UNTIL DATE	0101 YEAR 1999	And/Or
VAULT	= VAULTB	
UNTIL DATE	0101 YEAR 2000	And/Or
VAULT	= MAINLIB	
UNTIL DATE	0101 YEAR 2001	And/Or
VAULT	=	
DO CONDITION	= JOB0099_CHANGE_VAULT ODAT +	
AT CLOSE		
DO		
=====		
=====		
DAYS		DCAL
		AND/OR
WDAYS ALL		WCAL
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y	
DATES		
CONFCAL	SHIFT	
=====	>>>>>>>>>>>>>>>>	END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<< =====
FILL IN RULE DEFINITION.	CMD5: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT	15.49.41

DAYS: Basic Scheduling Parameter

Specifies the days of the month on that the rule is scheduled.

For more information, see also WDAYs and CONFCAL.

Figure 116 DAYS Parameter Format

DAYS

DCAL

AND/OR

WDAYS

WCAL

MONTHS

1-

2-

3-

4-

5-

6-

7-

8-

9-

10-

11-

12-

Optional. DAYS specifies days of the month on that rules are scheduled, provided other scheduling criteria are met. Values for DAYS can be specified alone, or they can be specified together with a calendar specified in the DCAL subparameter. DAYS/DCAL can also be specified together with WDAYs/WCAL (described under WDAYs in this chapter).

Parameter DAYS consists of the following:

Table 139 DAYS Subparameters (part 1 of 2)

Subparameter	Description
DAYS	Days of the month on which to schedule a rule. (The months in which to schedule rules are specified in the MONTHS parameter, described in this chapter.) Various formats (described later) can be used to specify DAYS (for example, 3 means the 3rd day of the month, L2 means the day before the last day of the month, D1PA means the 1st day in period A).
DCAL	<div>Name of a calendar containing a predefined set of dates (referred to as working days) on which a rule is scheduled. A specified name must be a valid member name of 1 through 8 characters. For more information on how to define, use and modify calendars, see “IOA Calendar Facility” on page 236.</div> <div>Note: A calendar specified in subparameter DCAL does not have to exist when defining the rule parameters. Its existence is checked by the New Day procedure, so it must exist when the rule is ordered.</div>

Table 139 DAYS Subparameters (part 2 of 2)

Subparameter	Description
AND/OR	<p>Conjunctural parameter used to link the DAYS and WDAY parameters when both are specified.</p> <ul style="list-style-type: none"> ■ A (And) Both DAYS (/DCAL) and WDAY (/WCAL) criteria must be met for a rule to be scheduled. ■ O (Or) Either DAYS (/DCAL) or WDAY (/WCAL) criteria must be met for a rule to be scheduled. Default. ■ If A (And) is specified when either DAYS or WDAY is specified (but not both), the missing DAYS or WDAY value is automatically set to ALL.

Assuming all other scheduling criteria are met:

- When DAYS are specified without DCAL, the rule is scheduled on the specified days (in the specified months).
- When DCAL is specified without DAYS, the rule is scheduled on the working days marked in the DCAL calendar.
- When DAYS and DCAL are both specified, scheduling depends on how the working days defined in the calendar, and the values and format of the DAYS parameter combine (described below).
- When both DAYS and WDAY criteria are specified, scheduling depends on the AND/OR subparameter connecting them.

Valid Formats for DAYS

Valid formats for the DAYS parameter, and how they relate to DCAL, are described below.

In the following non-periodic scheduling formats:

- n is an integer from 1 to 31.
- Multiple values can be specified (separated by commas) in any order.
- DCAL should not contain the name of a periodic calendar.

Table 140 Non-Periodic Scheduling Formats

Format	Description
ALL	All days in the month. If ALL is specified, other DAYS values cannot be specified with it. If a DCAL calendar is not defined, schedule the rule on all days in the month. If a DCAL calendar is defined, schedule the rule only on the working days indicated in the calendar.
n,...	Specific days of the month. If a DCAL calendar is not defined, schedule the rule on the specified days. If a DCAL calendar is defined, schedule the rule only when a day is defined as a working day in both the DAYS and the DCAL parameters.
+n,...	Days of the month in addition to the working days specified in the DCAL calendar. DCAL is mandatory.
-n,...	Order the rule on all days except the nth day from the beginning of the month. DCAL is mandatory.
>n,...	Schedule the rule on the indicated day if it is a working day in the DCAL calendar; otherwise, schedule the rule on the next working day of the month that is not negated by a -n value in this parameter. This format is frequently used for holiday handling. DCAL is mandatory.
<n,...	Schedule the rule on the indicated day if it is a working day in the DCAL calendar; otherwise, schedule the rule on the last previous working day of the month that is not negated by a -n value in this parameter. This format is frequently used for holiday handling. DCAL is mandatory.
Dn,...	Schedule the rule on the nth working day from the beginning of the month. DCAL is mandatory.
-Dn,...	Schedule the rule on all working days except the nth working day from the beginning of the month. DCAL is mandatory.
Ln,...	Schedule the rule on the nth day (or nth working day if DCAL is defined) counting backward from the end of the month. DCAL is optional.
-Ln,...	If DCAL is defined, schedule the rule on all working days except the nth working day counting backward from the end of the month. If DCAL is not defined, schedule the rule on all days except the nth day counting backward from the end of the month. DCAL is optional.

In the following periodic scheduling formats:

- *n* is any integer from 1 through 63 and *i* is any valid period identifier (or * for all periods).
- An * can be specified as the *n* value in format DnPi to represent all days. (* is not a valid *n* value in formats -DnPi, LnPi, and -LnPi.)

- A period can span any number of days, but by default, no more than 33 days can elapse after the appearance of one identifier in a period until the appearance of the next matching identifier in the same period. Once a gap of 33 days has been reached, the period automatically closes. (The 33-day default can be changed by the INCONTROL administrator.)

The name of a periodic calendar must be specified in DCAL. Refer to the IOA Calendar facility in Chapter 2 for details concerning periodic calendars.

Table 141 Periodic Scheduling Formats

Format	Description
DnPi,...	Schedule the rule on the <i>n</i> th day of period <i>i</i> from the beginning of the period.
-DnPi,...	Schedule the rule on all days of period <i>i</i> except the <i>n</i> th day of period <i>i</i> from the beginning of the period.
LnPi,...	Schedule the rule on the <i>n</i> th day of period <i>i</i> counting backward from the last day of the period.
-LnPi,...	Schedule the rule on all days of period <i>i</i> except the <i>n</i> th day of period <i>i</i> counting backward from the last day of the period.

General Information

Negative values take precedence over positive values when determining whether a rule is scheduled on a certain date. If a negative value (meaning, format -n, -Dn, -Ln, -DnPi, or -LnPi) in either the DAYS or WDAYs field prevents a rule from being scheduled on a date, the rule is not scheduled on that date even if a positive value (for example, Ln) would otherwise result in the rule being scheduled on that date.

A maximum of eight periodic values (meaning, of type DnPi, -DnPi, LnPi, and -LnPi) can be designated in any desired order.

If periodic and non-periodic values are mixed when specifying parameter DAYS, processing depends on the type of calendar specified in parameter DCAL.

- If a non-periodic calendar is specified in the DCAL parameter, only non-periodic values in the DAYS parameter are processed; periodic values are ignored. In this case, negative periodic values (meaning, -DnPi, -LnPi) are also ignored and do not supersede other values.
- If a periodic calendar is specified in the DCAL parameter, all periodic values and the negative non-periodic value -n in the DAYS parameter are processed; all other non-periodic values are ignored.

Parameter MONTHS is ignored when periodic values are specified in parameter DAYS.

Parameter DAYS cannot be used with parameter DATES.

Examples

The examples in this chapter are based on the following assumptions:

- The current month is December 2001.
- Working days are defined in calendar WORKDAYS that contains the following working days (indicated by Y) for December 2001.

---S-----S-----S-----S-----S---																																	
1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1			
		Y	Y	Y	Y	Y				Y	Y	Y	Y	Y		Y	Y	Y	Y				Y		Y	Y	Y		Y				

- WDAYs are defined as working days beginning on Monday.
- Periodic calendar PERIDAYS contains the following periodic definition for December 2001. These examples assume that all other days of this calendar are blank.

---S-----S-----S-----S-----S---																																	
1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1			
		B	C	A	A	B				B	C	A	A	B		B	C	A	A	B			B	C	A	A	B		B				

- Start of the week is defined as Monday. Weeks start on the following dates in December 2001: 3th, 10th, 17th, 24th, and 31st.

At the end of each example, asterisks on a December 2001 calendar indicate the days on which the rule is scheduled.

Example 1

Schedule the rule on the 17th day and the last day of the month.

DAYS	-	17,L01
------	---	--------

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 117 DAYS Parameter – Example 1

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
																*														*

Example 2

Schedule the rule on all working days of the month except the 6th day of the month, and also schedule the rule on the 1st day of the month.

DAYS	- +1, -6
DCAL	- WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 118 DAYS Parameter – Example 2

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
*		*	*	*		*			*	*	*	*	*			*	*	*	*	*			*		*	*	*			*

Example 3

Schedule the rule on all working days of the month except the first and last working days, and except the 17th day of the month.

DAYS	- -D1, -17, -L1
DCAL	- WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 119 DAYS Parameter – Example 3

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
			*	*	*	*			*	*	*	*	*				*	*	*	*			*		*	*	*			

Example 4

Schedule the rule on the eighth day of the month. If it is not a working day, schedule the rule on the closest preceding working day.

DAYS	- <8
DCAL	- WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 120 DAYS Parameter – Example 4

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
						*																								

Example 5

Schedule the rule on the 1st day of period A, and on all days, except the 2nd day, of period B. Do not schedule the rule on the 5th day of the month.

DAYS	- -5,D1PA,-D2PB
DCAL	- PERIDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 121 DAYS Parameter – Example 5

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*							*				*			*				*			*				*			*

Example 6

Schedule the rule on each Monday and on the 1st day of the month.

DAYS	- 1
AND/OR	- OR
WDAYS	- 1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 122 DAYS Parameter – Example 6

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
*		*							*							*							*							*

Example 7

Schedule the rule on the 3rd day of the month provided it is a Monday.

DAYS	- 3
AND/OR	- AND
WDAYS	- 1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 123 DAYS Parameter – Example 7

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*																												

Example 8

Schedule the rule on the last Monday of the month.

DAYS - L1,L2,L3,L4,L5,L6,L7
AND/OR - AND
WDAYS - 1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 124 DAYS Parameter – Example 8

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
																														*

Example 9

Schedule the rule on the 1st, 7th and 15th days of the month if they are both Saturdays and working days. If the day of the month (1st, 7th, 15th) is not a Saturday, do not schedule the rule. If the day of the month is a Saturday, but it is not a working day, schedule the rule on the next working day.

DAYS - 1,7,15
AND/OR - AND
WDAYS - 6
CONFCAL - WORKDAYS
SHIFT - >

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 125 DAYS Parameter – Example 9

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*														*														

Example 10

Schedule the rule to run on the first Friday after the 15th of the month.

DAYS	16,17,18,19,20,21,22
AND/OR	AND
WDAYS	5

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 126 DAYS Parameter – Example 10

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
																				*										

DESCRIPTION: General Parameter

Description of the rule definition (in free text).

Figure 127 DESCRIPTION Parameter Format

RULE NAME	<input type="text"/>	GROUP	<input type="text"/>	MODE	<input type="text"/> (Prod/Test)
OWNER	<input type="text"/>	SEQUENCE PRIORITY	<input type="text"/>	CONTINUE SEARCH	<input type="text"/> (Y/N)
DESCRIPTION	<input type="text"/>				
DOCMEM	<input type="text"/>	DOCLIB	<input type="text"/>		

The specified DESCRIPTION can include 1 through 61 characters per line. Multiple lines are allowed.

General Information

Parameter DESCRIPTION is an optional, free text description of the rule in any language. It serves as internal documentation to aid in the identification and description of individual rules under CONTROL-M/Tape.

When text is typed on the last displayed description line and **Enter** is pressed, a new, blank description line is automatically displayed.

The first line of the description is displayed to the right of the rule name in the Rule List screen when the DESC command is entered in the COMMAND field of the Rule List screen.

For information on how to create more complete rule documentation, see [“Rule Documentation” on page 116](#).

Example

Figure 128 DESCRIPTION Parameter Example

RULE: JOB0099 LIB CTT.PROD.RULES			TABLE: ADM0002
COMMAND ===>			SCROLL===> CRSR

RULE NAME	JOB0099	GROUP PRODUCTION	MODE PROD (Prod/Test)
OWNER	M43	SEQUENCE PRIORITY 01	CONTINUE SEARCH Y (Y/N)
DESCRIPTION SET VAULT PATTERN OF JOB0099 VOLUMES			
DOCMEM	JOBDOCS	DOCLIB CTT.PROD.DOC	
=====			
ON DATASET	= *		And/Or/Not
=====			
DO VAULT	= VAULTA		
UNTIL	DATE	0101 YEAR 1999	And/Or
VAULT	= VAULTB		
UNTIL	DATE	0101 YEAR 2000	And/Or
VAULT	= MAINLIB		
UNTIL	DATE	0101 YEAR 2001	And/Or
VAULT	=		
DO CONDITION	= JOB0099_CHANGE_VAULT ODAT +		
	AT CLOSE		
DO			
=====			
=====			
DAYS		DCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT			15.49.41

DO Statement: Action Parameter

Actions performed when the ON selection criteria are satisfied.

Figure 129 DO Parameter Format

```

DESCRIPTION
DOCMEM    BTR1    DOCLIB
=====
ON    =                                     And/Or/Not
=====
DO    =
  
```

Optional. Specify DO statements as follows:

- Type the action keyword (for example, POOL) in the DO field and press **Enter**.
- In many cases, subparameter fields is displayed. Fill in the subparameters and press **Enter** again.

After entering a DO statement, another DO line is automatically displayed. Any number of DO statements can be specified.

The following are valid DO actions. Each is discussed in detail later in this chapter.

Table 142 DO Statement Actions (part 1 of 2)

Action	Description
DO ABENDRET	Specifies how long the data set or volume is retained if an abend occurs while the data set is open.
DO BYPASS	Indicates whether CONTROL-M/Tape should bypass tape management activities for the data set.
DO CONDITION	Adds or deletes prerequisite conditions.
DO DYNDS	Indicates whether a data set is dynamically added to the Media Database.
DO DYNVOL	Indicates whether a volume is dynamically added to the Media Database.
DO FASTPOS	Indicates whether CONTROL-M/Tape should request Fast Positioning for a tape.
DO FORCEJOB	Forces (schedules) a job under CONTROL-M.
DO LABEL	Determines whether an external (gummed) label is printed upon creation of the data set.

Table 142 DO Statement Actions (part 2 of 2)

Action	Description
DO OVERJCL	Indicates whether MVS retention attributes for the data set is overridden by CONTROL-M/Tape rules.
DO OWNER	Assigns an owner to the volumes and data sets.
DO POOL	Indicates the pool from which scratch volumes are taken.
DO RECREATE	Indicates whether an existing data set is overwritten by the data set.
DO RESOURCE	Modifies the quantity of Quantitative resources.
DO RETENTION	Specifies how long the data set or volume is retained.
DO SET	Assigns a value to an IOA AutoEdit variable.
DO SHOUT	Issues a message to a console, TSO user ID, ROSCOE user, IOA Log, or Info/Management.
DO STACK	Enables or disables stacking of data sets.
DO STKDEFSZ	Indicates a default size for the data set if it is to be stacked.
DO STKGROUP	Indicates a stacking group for the data set.
DO STKMODE	Indicates a method to be used for stacking the data set.
DO STKMXMLBL	Indicates a maximum number of data sets with that the data set can be stacked on one volume.
DO STKMXXVOL	Indicates the maximum number of volumes in a chain on which the data set can be stacked.
DO STKRULE	Indicates a stacking limitation for the data set.
DO STKSARCHL	Indicates a maximum number of volumes that can be considered for stacking the data set.
DO VAULT	Identifies name, location and retention specifications of a vault for volume storage.

General Information

CONTROL-M/Tape DO statements are divided into the following categories:

- DO statements that are unique to CONTROL-M/Tape and do not interface with other INCONTROL products (for example, DO ABENDRET, DO LABEL, DO POOL, DO RETENTION, DO STACK and DO VAULT).
- DO statements that interface with or are common to other INCONTROL products. This category includes DO CONDITION, DO FORCEJOB, DO RESOURCE, DO SET, and DO SHOUT.

To add an empty DO statement between two existing DO statements, type the > character over the first letter in the DO field of the earlier DO statement, and press **Enter**.

Example

DO >CONDITION

Note that **CONDITION** is restored to its original value when **Enter** is pressed (meaning, the > character disappears).

To delete unwanted DO statements, either delete the DO keyword and press **Enter** or specify the appropriate Line Editing commands in the Edit environment, which is described in [Appendix A, “Editing Rule Definitions in the IOA Edit Environment,”](#)

DO ABENDRET: Action Parameter

Specifies a period during which a data set is retained (meaning, protected from being scratched or overwritten) following a job abend or a system crash that occurs while the data set is open.

Figure 130 DO ABENDRET Parameter Format

A screenshot of a user interface for defining the DO ABENDRET parameter. It features a light gray rounded rectangle with a dark gray border. Inside, the text "DO ABENDRET =" is followed by two empty rectangular input fields. To the right of these fields is the text "And/Or" followed by another empty rectangular input field. Below the first two fields, the text "DO" is followed by a single empty rectangular input field.

Optional. Type ABENDRET (or its abbreviation A) in the DO field and press **Enter**.

Specify an abend retention type to the right of the = prompt.

Only one DO ABENDRET statement can be specified per rule definition. A maximum of three retention types can be specified in the DO ABENDRET statement.

Depending on the abend retention type specified, different subparameters are displayed.

The abend retention types, their abbreviations, descriptions, and subparameters, are described [Table 143](#).

Table 143 ABEND Retention Types (part 1 of 3)

Type	Description
CYCLES (CY)	<p>Abend retention is based on the number of cycles (meaning, versions) of a data set.</p> <p>For a more detailed description, refer to the CYCLECNT parameter in the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>Syntax: CYCLES=<i>number_cycles</i> where <i>number_cycles</i> is the number of cycles. A maximum of 4 digits can be specified. After the number of cycles is entered, the PREFIX field is displayed.</p> <p>The value in the PREFIX field determines whether data set versions are identified according to their prefixes (as specified in the ON DATASET statement), or according to their full names, when counting cycles. Mandatory. Valid values:</p> <ul style="list-style-type: none"> ■ Y (Yes) – Consider data sets with the same prefix as versions of the same data set, and make a unified count of all versions (for example, assuming prefix mask BKP*, make a single count of versions of data sets BKP01 and BKP02). ■ N (No) – Ignore prefixes, and consider the entire data set name (for example, count versions of BKP01 separately from versions of BKP02). <p>And/Or – When A (And) or O (Or) is specified, an additionalabend retention field is opened on the screen. “And/Or Subparameter Logic” is described earlier in this chapter.</p>
DATE (DAT)	<p>Abend retention is based on a specific expiration date.</p> <p>Syntax: DATE=<i>expire_date</i> where <i>expire_date</i> is the expiration date. If date is specified at the same time as the abend retention type, the date must be specified in 6-digit or 8-digit format according to the site standard. For example, the date can be specified in mmddyy or mmddyyyy format.</p> <p>Alternatively, the date can be specified in a 4-digit format, and the YEAR field is displayed. For example, specify mmdd and press Enter; the YEAR field is displayed. Specify the YEAR in 2-digit (yy) or 4-digit (yyyy) format.</p> <p>And/Or–And/Or When A (And) or O (Or) is specified, an additionalabend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

Table 143 ABEND Retention Types (part 2 of 3)

Type	Description
DAYS (DAY)	<p>Abend retention is based on the number of days since the data set was created.</p> <p>Syntax: DAYS=<i>number_days</i> where <i>number_days</i> is the number of days. A maximum of 4 digits can be specified.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional abend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
EDM (ED)	<p>Abend retention is controlled by an External Data Manager (EDM).</p> <p>No subparameters are specified with this abend retention type.</p> <p>No other abend retention types can be combined with this abend retention type (meaning, using And/Or).</p>
JCL EXPDT (J)	<p>Abend retention is based on the expiration date specified in the JCL EXPDT, RETPD or DATACLAS parameter.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional abend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
LAST ACCESS (L)	<p>Abend retention is based on the number of days since the data set was last accessed.</p> <p>Syntax: LAST ACCESS=<i>number_days</i> where <i>number_days</i> is the Number of days. A maximum of 4 digits can be specified.</p> <p>And/Or–When A (And) or O (Or) is specified, an additional abend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

Table 143 ABEND Retention Types (part 3 of 3)

Type	Description
MVS CATALOG (M or CA)	<p>Abend retention is based on the existence of the data set in the MVS catalog. If the MVS catalog still controls the data set, the data set is retained by CONTROL-M/Tape. Otherwise, the data set is no longer retained by CONTROL-M/Tape.</p> <p>No subparameters are specified with this abend retention type.</p> <p>And/Or-When A (And) or O (Or) is specified, an additional abend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
PERMANENT (P)	<p>Data set is retained indefinitely. This abend retention type allows data set or volume expiration to be done manually. This can be done using the EXPIRE option in the Inquire/Update screen.</p> <p>No subparameters are specified with this abend retention type.</p> <p>No other abend retention types can be combined with this abend retention type (meaning, using And/Or).</p>

General Information

Normal data set retention periods are based on criteria defined by parameter DO RETENTION (see the description of parameter DO RETENTION in this chapter). However, alternate retention criteria can be used if an abend (or system crash) occurs. These alternate (abend) retention criteria are specified by parameter DO ABENDRET. As with normal retention periods, if the abend retention period has passed, the data set can be overwritten – even if the data set is located on a non-scratch volume.

When a data set is opened, CONTROL-M/Tape scans the rules to determine abend retention expiration dates. If an abend occurs before the normal close of the data set, the current generation of the data set is the expiration date specified in a DO ABENDRET statement.

When a data set is closed normally, CONTROL-M/Tape scans the rules to determine normal retention expiration dates.

For additional information on retention periods, see [“Retention Management” on page 438](#).

If a DO RETENTION statement and a DO ABENDRET statement are included in a rule definition and both these statements specify the CYCLES retention type, the value for subparameter PREFIX in these statements must be identical. The setting for subparameter PREFIX however, does not have to match the setting for this subparameter in a DO VAULT statement specifying the CYCLES retention type.

Examples

Example 1

Scratch backup files of jobs that abended if the files have not been accessed for three days.

Figure 131 DO ABENDRET Parameter – Example 1

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ===>				SCROLL===> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION		MODE PROD (Prod/Test)	
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES					
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0030		And/Or	
DO ABENDRET	= LAST ACCESS	0010		And/Or	
DO					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
FILL IN RULEDEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

Example 2

Retain for ten days backup files from jobs that abended while creating the data sets.

Figure 132 DO ABENDRET Parameter – Example 2

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 03	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not	A
ON PGM	= BKP*			And/Or/Not	A
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS		0365	And/Or	
DO ABENDRET	= DAYS		0010	And/Or	
DO					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

DO BYPASS: Action Parameter

Indicates that tape management activities are not be performed for the specified data sets.

Figure 133 DO BYPASS Parameter Format



Optional. Type **BYPASS** (or its abbreviation **B**) in the DO field and press **Enter**. Specify Y or N to the right of the = prompt.

Table 144 DO BYPASS Subparameters

Subparameter	Description
Y (Yes)	The data sets are bypassed by CONTROL-M/Tape.
N (No)	The data sets are not bypassed. This value has the same effect as not specifying any DO BYPASS statement.

Only one DO BYPASS statement can be specified per CONTROL-M/Tape rule.

General Information

If the expression DO BYPASS=Y is specified in a CONTROL-M/Tape rule, the data set or data sets specified in the ON DATASET statement of the rule are treated as if the expression EXPDT=98000 was specified for them in the JCL (meaning, no tape management activities are performed for these data sets).

WARNING



When the expression DO BYPASS=Y is specified, tapes may be inadvertently overwritten, because there the protection that is normally provided by CONTROL-M/Tape when it is not bypassed is missing. Therefore, use this expression infrequently and carefully.

Bypass CONTROL-M/Tape for data sets with names prefixed by SYSTEM.DSNS.

```

RULE: ACCT4          LIB CTTTP.PROD.RULES          TABLE: SAMPLES
COMMAND ===>          SCROLL===> CRSR

-----
RULE NAME      ACCT4      GROUP                                MODE PROD (Prod/Test)
OWNER          N89        SEQUENCE PRIORITY      CONTINUE SEARCH N      (Y/N)
DESCRIPTION    SAMPLE FOR USER MANUAL
DESCRIPTION
DOCMEM         ACCT4      DOCLIB CTTTP.PROD.DOC
=====
ON USERID      = SYS*                                         And/Or/Not
=====
DO BYPASS      = YES
DO
=====
=====
DAYS                                                    DCAL
                                                    AND/OR
WDAYS          ALL                                           WCAL
MONTHS         1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y
DATES
CONFCAL        SHIFT
===== >>>>>>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<<< ===
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT      14.09.27

```

DO CONDITION: Action Statement

Specification of prerequisite conditions to be added or deleted.

Figure 135 DO CONDITION Parameter Format



Optional. Type **CONDITION** (or its abbreviation **C**) in the DO field and press **Enter**. The DO CONDITION statement consists of the following subparameters:

Table 145 DO CONDITION Subparameters (part 1 of 2)

Subparameter	Description
<i>name</i>	Descriptive name (1 through 20 characters). No blanks (except trailing blanks) are allowed. Mandatory. One prerequisite condition can be entered for each specified DO CONDITION.
<i>date_ref</i>	<p>A 4-character date reference that can be a specific date (in either mmdd or ddmm format, depending on the site standard), or that can have one of the following values:</p> <ul style="list-style-type: none"> ■ ODAT — Original scheduling date. Default. ■ DATE — Resolves to the system computer date. ■ PREV — Resolves to the rule's previously scheduled activation date (or, for forced rules, ODAT-1). ■ NEXT — Resolves to the rule's next scheduling activation rule (or, for forced rules, ODAT+1). ■ STAT — Indicates that the condition (for example, IMS-ACTIVE) is not date dependent. <p>Note: Before STAT was introduced, date 0101 was recommended to be used in conditions that were not date-dependent. Unlike 0101, STAT is not a date, and it operates differently. Always use STAT when defining conditions that are not date-dependent.</p> <ul style="list-style-type: none"> ■ **** – Any schedule date. ■ \$\$\$\$ – Any schedule date. <p>The **** and \$\$\$\$ date references can only be used with the <i>condopt</i> parameter set to – (delete). When specifying a **** or \$\$\$\$ date reference, any prerequisite condition with the same name, with any date reference, is deleted.</p>

Table 145 DO CONDITION Subparameters (part 2 of 2)

Subparameter	Description
<i>condopt</i>	This option can have one of two values: <ul style="list-style-type: none"> ■ - — Delete the prerequisite condition. ■ + — Add (create) the prerequisite condition.
AT	The operation is performed if the specified event occurs. The shortest unique abbreviation can be specified. Valid values are: <ul style="list-style-type: none"> ■ Check in Volumes (CH) — An external volume is checked in either automatically or manually by screen TC. ■ Mount (M) — The media is mounted by the operator. <ul style="list-style-type: none"> — Supported only if Y (Yes) or M (Mount) was specified for CONTROL-M/Tape installation parameter DYNWTO. ■ Open (O) — The data set is opened. ■ Close (CL) — The data set is closed. ■ Abend or Close (A) — The data set is closed due to an abend. ■ Keep (K) — The media is dismounted and returned by the operator. <ul style="list-style-type: none"> — Supported only if Y (Yes) or K (Keep) was specified for CONTROL-M/Tape installation parameter DYNWTO.

NOTE

Open, Close or Abend Close apply only for data set creation events.

Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name, since this information is not available from the Keep message.

You can specify multiple DO CONDITION statements in a rule.

General Information

When DO CONDITION is specified, the designated prerequisite condition is added to, or deleted from, the IOA Conditions file (according to the option specified).

A prerequisite condition can define any user-specified situation. The following are examples of prerequisite conditions:

```
VOL-IN-USE
TAPE-MOUNTED
```

The creation or deletion of prerequisite conditions by a DO CONDITION statement can trigger (or prevent) the execution of processes in CONTROL-M, CONTROL-D, and other environments that require those prerequisite conditions as IN conditions.

Each prerequisite condition is associated with a specified scheduling date.

If two or more DO CONDITION statements contradict one another, the last executed statement overrides the preceding statements.

AutoEdit variables can be embedded only into the name of the condition in the DO CONDITION statement (but not the date reference). These variables are resolved (replaced) at time of rule activation. For information about AutoEdit variables, see [Appendix B, “AutoEdit Variables.”](#)

Example

Prerequisite condition CRNCY-FILE-PROCESSED is added when data set FOREIGN.CURRENCY.FILE is closed successfully. If the data set is closed under abend, the prerequisite condition CRNCY-FILE-PROC-FAILED is added. These conditions can be used to trigger jobs in CONTROL-M.

Figure 136 DO CONDITION Parameter Example

RULE: FORGNCND LIB CTT.PROD.RULES				TABLE: FOREIGN	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	FORGNCND	GROUP	MODE PROD (Prod/Test)		
OWNER	N73	SEQUENCE	PRIORITY 01	CONTINUE SEARCH Y	(Y/N)
DESCRIPTION	THIS RULE TRIGGERS JOBS IN CONTROL-M ACCORDING TO THE				
DESCRIPTION	SUCCESSFUL CLOSING OF THE CURRENCY FILE				
DESCRIPTION					
DOCMEM	FORGNCND	DOCLIB	CTT.PROD.DOCS		
=====					
ON DATASET	= FOREIGN.CURRENCY.FILE			And/Or/Not	
=====					
DO CONDITION	= CRNCY-FILE-PROCESSED ODAT +				
	AT	CLOSE			
DO CONDITION	= CRNCY-FILE-PROC-FAIL ODAT +				
	AT	CLOSE AFTER ABEND			
DO CONDITION	CRNCY-FILE-PROC-FAIL ODAT -				
	AT	CLOSE			
DO CONDITION	CRNCY FILE PROCESSED ODAT -				
	AT	CLOSE AFTER ABEND			
DO					
=====					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				17.25.32	

DO DYND: Action Parameter

Indicates whether the specified data sets are added to the Media Database.

Figure 137 DO DYND Parameter Format

```
DO DYND = 
DO 
```

Optional. Type **DYND** (or its abbreviation **DYND**) in the DO field and press **Enter**. Specify Y or N to the right of the = prompt.

Table 146 DO DYND Subparameters

Subparameter	Description
Y (Yes)	Add a data set record to the Media Database and allow the job to access the data set.
N (No)	Do not add a data set record to the Media Database. If this value is specified, the job abends.

Only one DO DYND statement can be specified per rule.

General Information

If a job attempts to read or update a specific data set and the data set is not defined in the Media Database, this statement determines whether a data set record describing the data set is added to the Media Database.

If no DO DYND statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter DYND determines whether a data set record is created in the Media Database.

Example

Allow dynamic definition of data sets with names prefixed by N70.DSNS.

Figure 138 DO DYNDIS Parameter Example

```

RULE: ACCT5          LIB CTTT.PROD.RULES                TABLE: SAMPLES
COMMAND ==>                                     SCROLL==> CRSR
-----
RULE NAME    ACCT5      GROUP                                MODE PROD (Prod/Test)
OWNER        N89       SEQUENCE PRIORITY         CONTINUE SEARCH N   (Y/N)
DESCRIPTION  ALLOW DYNAMIC DEFINITION OF DATASETS WITH AN N70.DSNS PREFIX
DESCRIPTION
DOCMEM       ACCT5     DOCLIB CTTT.PROD.DOC
=====
ON DATASET   = N70.DSNS*                                    And/Or/Not
=====
DO DYNDNS    = YES
DO
=====
=====
DAYS                                                  DCAL
                                                    AND/OR
WDAYS ALL                                           WCAL
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y
DATES
CONFCAL              SHIFT
===== >>>>>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<< =====
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT           14.18.50

```

DO DYNVOL: Action Parameter

Indicates whether the specified volumes are added dynamically to the Media Database.

Figure 139 DO DYNVOL Parameter Format

The screenshot shows a form with the following fields and labels:

- DO** (field)
- DYNVOL** (field)
- = SPECIFIC REQUEST=** (label)
- NON SPECIFIC REQUEST (SCRATCH)=** (label)
- DO** (field)

Optional. Type **DYNVOL** (or its abbreviation **DYNV**) in the DO field and press **Enter**. The following subparameter fields are displayed:

Table 147 DO DYNVOL Subparameters

Subparameter	Description
SPECIFIC REQUEST	Indicates handling of requests for a specific volume.
NON SPECIFIC REQUEST	Indicates handling of requests for a SCRATCH volume.

Each of these fields must be filled in with one of the following values:

Table 148 DO DYNVOL Subparameter Values (part 1 of 2)

Value	Description
Y	Add the volume definition to the Media Database.
N	Do not add the volume definition to the Media Database. For specific requests, force the job to abend. For scratch requests, reject the volume.
P	Display a message prompting the operator to specify whether the volume's definition is added to the Media Database.
E	Add the volume definition to the Media Database, and mark the volume as External.

Table 148 DO DYNVOL Subparameter Values (part 2 of 2)

Value	Description
I	Ignore the volume and continue the job without CONTROL-M/Tape intervention or information recording. No information is recorded in the Media Database regarding the volume or the data sets on that volume. Note: If a subsequent tape that is mounted during the run of the job is found to already exist in the Media Database, either the job is abended (for specific tape requests), or the tape is rejected and a different tape is requested (for nonspecific tape requests).

Only one DO DYNVOL statement can be specified per rule.

General Information

If a job attempts to access a volume that is not defined in the Media Database, this statement determines whether a volume record describing the volume is added to the Media Database.

If no DO DYNVOL statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter DYNVOL determines whether a volume record is created in the Media Database.

Example

If a data set is created on a volume in the range EVOL01 to EVOL99, that is not defined in the Media Database, either define the volume dynamically (for specific requests), or define it as an External Volume (for a Scratch request).

RULE, ACCT6	LIP, CTTP, PROD, RULES	TABLE, SAMPLES
-------------	------------------------	----------------

DO FASTPOS: Action Parameter

Indicates that specified data sets are located using Fast Positioning.

Figure 141 DO FASTPOS Parameter Format



Optional. Type **FASTPOS** (or **FA**) in the DO field and press **Enter**. Specify YES (or Y), NO (N), OVERRIDE (O), or TEST (T) following the = prompt.

Table 149 DO FASTPOS Subparameters

Subparameter	Description
Y (Yes)	Use CONTROL-M/Tape Fast Positioning. However, if the program has its own Fast Positioning mechanism, that mechanism is used and CONTROL-M/Tape does not intervene.
N (No)	Do not use CONTROL-M/Tape Fast Positioning. If the program has its own Fast Positioning mechanism, that mechanism is used and CONTROL-M/Tape does not intervene.
OVERRIDE	Same as YES, but use CONTROL-M/Tape Fast Positioning even if the program has its own Fast Positioning mechanism. However, if CONTROL-M/Tape Fast Positioning is not appropriate (for example, you are appending to the data set) and the program has its own Fast Positioning mechanism, that mechanism is used and CONTROL-M/Tape does not intervene.
TEST	Same as YES, but in addition use CONTROL-M/Tape Fast Positioning when CONTROL-M/Tape is running in Test mode.

NOTE

Only one DO FASTPOS statement can be specified per rule.



DO FORCEJOB: Action Parameter

Force a job under CONTROL-M for z/OS.

Figure 143 DO FORCEJOB Parameter Format

DO FORCEJOB =

TABLE

JOB

DATE

LIBRARY

AT

(Check in vols /Mount /Open / Close /Abend Close /Keep)

DO

Type the word **FORCEJOB** (or its abbreviation **FO**) in the DO field and press **Enter**. The following subparameters are displayed:

Table 150 DO FORCEJOB Subparameters (part 1 of 2)

Subparameter	Description
TABLE	Name of a CONTROL-M scheduling table (1 through 8 characters).
JOB	Job name (1 through 8 characters). If this field is blank, all the jobs in the specified table are forced
DATE	Date used by CONTROL-M as the job's scheduling date. Mandatory. DATE can be a specific date (in mmddyy or ddmmyy or yymmdd format, depending on the site standard), or it can have one of the following values: <ul style="list-style-type: none">■ ODAT – Resolve to the installation working date. Default.■ DATE – Resolve to the system computer date.
LIBRARY	Name of the CONTROL-M scheduling library containing the specified table (1 through 44 characters). Mandatory.

Table 150 DO FORCEJOB Subparameters (part 2 of 2)

Subparameter	Description
AT	<p>The operation is performed if the specified event occurs. Note that the shortest unique abbreviation can be specified. Mandatory. Valid values are:</p> <ul style="list-style-type: none"> ■ Check in Volumes (CH)–An external volume is checked in either automatically, or manually using screen TC. ■ Mount (M) – The media is mounted by the operator. Supported only if Y (Yes) or M (Mount) was specified for CONTROL-M/Tape installation parameter DYNWTO. ■ Open (O) – The data set is opened. ■ Close (CL) – The data set is closed. ■ Abend Close (A) – The data set is closed due to an abend. ■ Keep (K) – The media is dismounted and returned by the operator. Supported only if Y (Yes) or K (Keep) was specified for CONTROL-M/Tape installation parameter DYNWTO. <p>Notes: Open, Close or Abend Close apply only for data set creation events.</p> <p>Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name since this information is not available from the Keep message.</p>

General Information

CONTROL-M/Tape AutoEdit variables embedded in the TABLE, JOB, DATE, and LIBRARY subparameters are automatically resolved (replaced) at time of rule activation. For information about the use of AutoEdit variables, see [Appendix B, “AutoEdit Variables.”](#)

DO FORCEJOB requests that CONTROL-M add the jobs to the CONTROL-M Active Jobs file, even if the job’s basic scheduling criteria are not met. Using DO FORCEJOB is the same as using the FORCE option in the CONTROL-M Job List screen.

Example

Whenever data set FOREIGN.CURRENCY.REPORT is checked into the system, CONTROL-M job FORGNREP (that processes the checked-in data set) is forced.

Figure 144 DO FORCEJOB Parameter Example

RULE: FORGNREP LIB CTT.PROD.RULES				TABLE: FOREIGN	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	FORGNREP	GROUP		MODE	PROD (Prod/Test)
OWNER	N73	SEQUENCE	PRIORITY 01	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION THIS RULE FORCES A CONTROL-M JOB THAT READS THE FOREIGN					
DESCRIPTION CURRENCY REPORT THAT IS CHECKED INTO THE SYSTEM.					
DESCRIPTION					
DOCMEM	FORGNREP	DOCLIB	CTT.PROD.DOCS		
=====					
ON DATASET	= FOREIGN.CURRENCY.REPORT			And/Or/Not	
=====					
DO FORCEJOB	=	TABLE FOREIGN	JOB FORGNREP	DATE ODAT	
		LIBRARY CTM.PROD.SCHEDULE			
	AT	CHECK IN VOLUMES			
DO SHOUT	=	TO TSO-N73	URGENCY R		
MESSAGE	CONTROL-M/TAPE RECEIVED A NEW FOREIGN TAPE %%VOL001				
	AT	CHECK IN VOLUMES			
DO SHOUT	=	TO TSO-N73	URGENCY V		
MESSAGE	PROCESSING OF FOREIGN.CURRENCY.REPORT ABENDED.				
	AT	CLOSE AFTER ABEND			
DO					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				17.13.09	

DO LABEL: Action Parameter

Indicates whether an external (gummed) label is printed when the data set is created.

Figure 145 DO LABEL Parameter Format

```
DO LABEL = (Y/N)
DO 
```

Optional. Type **LABEL** (or its abbreviation **L**) in the DO field and press **Enter**. Type **Y** or **N** following the = prompt.

Table 151 DO LABEL Subparameters

Subparameter	Description
Y (Yes)	Label is printed when the associated data set is created for the volume.
N (No)	Label is not printed. Default.

Only one DO LABEL statement can be specified per rule.

General Information

External labels are printed in one of two formats, depending on whether the volume is an external volume:

Table 152 DO LABEL Label Format

Format Specified	Description
External-Volume Label	Contains the volser, SL-NAME, check-in date, and expiration date.
Normal-Volume Label	Contains the first data set name, expiration date, volser, SL-NAME, blksize, lrecl, and creation data (date, time, job, and unit).

Label format can be customized by CONTROL-M/Tape Exit CTTX009. This exit can also be used to decide whether to print the label on the console printer or on the VTAM printer. Exit CTTX009 is described in the Exits chapter of the INCONTROL for z/OS Administrator Guide.

Example

Print labels for all data sets.

Figure 146 DO LABEL Parameter Example

RULE: STARTLBL LIB CTT.PROD.RULES										TABLE: PRD0043									
COMMAND ==>										SCROLL==> CRSR									

RULE NAME		STARTLBL		GROUP PRODUCTION						MODE PROD (Prod/Test)									
OWNER		M43A		SEQUENCE PRIORITY 01 CONTINUE SEARCH Y (Y/N)															
DESCRIPTION		THIS RULE CHANGES THE OWNER OF SPECIFIC M43 DATASETS TO M18.																	
DESCRIPTION																			
DOCMEM		CTTDOCS		DOCLIB		CTT.PROD.DOCS													
=====																			
DOC																			
=====																			
ON DATASET		= *												And/Or/Not A					
ON VOLSER		= VOL001																	
=====																			
DO LABEL		= Y																	
DO																			
=====																			
=====																			
DAYS		ALL												DCAL					
														AND/OR					
WDAYS														WCAL					
MONTHS		1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y																	
DATES																			
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT										15.49.41									

DO OVERJCL: Action Parameter

Indicates whether CONTROL-M/Tape rule definitions should override expiration dates set by the retention attributes of the operating system.

Figure 147 DO OVERJCL Parameter Format

```
DO OVERJCL = 
DO
```

Optional. Type **OVERJCL** (or its abbreviation **OV**) in the DO field and press **Enter**. Specify Y or N following the = prompt.

Table 153 DO OVERJCL Subparameters

Subparameter	Description
Y (Yes)	Rule definitions override MVS retention attributes.
N (No)	Rule definitions do not override MVS retention attributes.

Only one DO OVERJCL statement can be specified per rule.

General Information

The retention attributes of the operating system are derived from a combination of Retention Limit and Expiration attributes (if the CONTROL-M/Tape/DFSMS interface is active) and JCL EXPDT/RETPD parameters. The DO OVERJCL statement can be used to indicate if the retention specified in CONTROL-M/Tape rules should override operating system retention.

For more information about JCL EXPDT/RETPD parameters, see “Defining Management Class Attributes” in the IBM manual *DFSMSdfp Storage Administration Reference*.

If no DO OVERJCL statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter OVERJCL determines whether operating system retention is overridden by retention specified in CONTROL-M/Tape rules.

DO OWNER: Action Parameter

Assigns an owner to a volume or data set.

Figure 149 DO OWNER Parameter Format



Optional. Type **OWNER** (or its abbreviation **OW**) in the DO field and press **Enter**. Specify the OWNER name to the right of the = prompt.

Table 154 DO OWNER Subparameter

Subparameter	Description
<i>owner_name</i>	Name of the owner of the data set or volume, from 1 through 8 characters. No blanks, except trailing blanks, are allowed.

General Information

DO OWNER specifies a user-defined name of the owner of the volumes or data sets.

Only one DO OWNER statement can be specified per rule.

Example

Set the owner of volumes that begin with SYS to M18.

Figure 150 DO OWNER Parameter Example

RULE: STARTLBL LIB CTT.PROD.RULES										TABLE: PRD0043																	
COMMAND ==>										SCROLL==> CRSR																	

RULE NAME		STARTLBL	GROUP PRODUCTION							MODE PROD (Prod/Test)																	
OWNER		M43A	SEQUENCE PRIORITY 01 CONTINUE SEARCH Y							(Y/N)																	
DESCRIPTION		THIS RULE CHANGES THE OWNER OF SPECIFIC M43 DATASETS TO M18.																									
DESCRIPTION																											
DOCMEM		CTTDOCS	DOCLIB		CTT.PROD.DOCS																						
=====																											
DOC																											
=====																											
ON DATASET		= *																			And/Or/Not A						
ON VOLSER		= SYS																									
=====																											
DO OWNER		= M18																									
DO																											
=====																											
=====																											
DAYS		ALL															DCAL			AND/OR							
WDAYS																	WCAL										
MONTHS		1- Y	2- Y	3- Y	4- Y	5- Y	6- Y	7- Y	8- Y	9- Y	10- Y	11- Y	12- Y														
DATES																											
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT										15.49.41																	

DO POOL: Action Parameter

Indicates the name of the pool from which scratch volumes are taken.

Figure 151 DO POOL Parameter Format

Optional. Type the word **POOL** (or its abbreviation **P**) in the DO field and press **Enter**. Specify following subparameter to the right of the = prompt:

Table 155 DO POOL Subparameter

Subparameter	Description
<i>pool_name</i>	The name of the pool, from 1 through 15 characters, from which the scratch volume is taken.

General Information

DO POOL specifies the collection of volumes from that a scratch tape volume is requested. Each pool can contain any number of volumes.

Only one DO POOL statement can be specified per rule.

All pools are defined using the Pool Definition screen. By default, these definitions are stored in the CONTROL-M/Tape PARM library in member \$\$POOL.

NOTE



Under JES2, DO POOL can be used with any ON statement.

Under JES3, DO POOL can only be used with an ON DATASET, ON JOBNAME, and/or ON USERID statement.

Example

Assigns the ACCOUNTING pool to all jobs beginning with PRD.

Figure 152 DO POOL Parameter Example

RULE: POOLINIT LIB CTT.PROD.RULES				TABLE: PRD0004	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	POOLINIT	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 09	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION THIS RULE ASSIGNS THE ACCOUNTING POOL FOR SCRATCH					
DESCRIPTION PURPOSES TO JOBS STARTING WITH PRD.					
DESCRIPTION					
DOCMEM	POOLINIT	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= *			And/Or/Not A	
ON JOBNAME	= PRD*			And/Or/Not	
=====					
DO POOL	= ACCOUNTING				
DO					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
MONTHS	1- Y	2- Y	3- Y	4- Y	5- Y
DATES	6- Y	7- Y	8- Y	9- Y	10- Y
					11- Y
					12- Y
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

DO RECREATE: Action Parameter

Indicates whether an existing data set can be overwritten by the specified data sets.

Figure 153 DO RECREATE Parameter Format



Optional. Type **RECREATE** (or its abbreviation **REC**) in the DO field and press **Enter**. Specify one of the following values to the right of the = prompt:

Table 156 DO RECREATE Parameter Values

Value	Description
Y (Yes)	Overwrite the existing data set with the new data set if all of the conditions for this parameter have been met (see “General Information” on page 320).
N (No)	Do not overwrite the existing data set. This option forces the job to abend if a data set with the specified name already exists.
P (Permanent)	Overwrite the existing data set even if it was assigned permanent retention. This option is the same as Y (Yes), but without the condition related to permanent retention (see “General Information” on page 320).
D (Disp)	Overwrite the existing data set even if the disposition was New (DISP=NEW). This option is the same as Y (Yes), but without the condition related to DISP=OLD (see “General Information” on page 320).
A (All)	Overwrite the existing data set unconditionally. This option is the same as Y (Yes), but without any of the conditions for this parameter being met (see “General Information” on page 320). Warning: Use this option with great caution as it will overwrite all existing data and is unretrievable.

Only one DO RECREATE statement can be specified per rule.

General Information

When Y (Yes) is specified, CONTROL-M/Tape allows an existing data set to be overwritten if all of the following conditions are met:

- This is the last data set on the volume.
- The data set name is the same as that of the existing data set.
- The disposition is OLD (DISP=OLD).
- Y or P was specified for either the CONTROL-M/Tape installation parameter RECREATE, or the DO RECREATE statement in a CONTROL-M/Tape rule.
- The data set was not assigned permanent retention.

However, there is an exception when the job that is accessing the data set is the same job that created the data set (meaning, a different step in the same job). In this case, the expression DISP=NEW is acceptable.

If no DO RECREATE statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter RECREATE determines whether the data set can be recreated.

Example

Allow recreation of data sets prefixed by N70.NEW.DATASETS.

Figure 154 DO RECREATE Parameter Example

```
RULE: ACCT8      LIB CTPP.PROD.RULES          TABLE: SAMPLES  
COMMAND ==>                                SCROLL==> CRSR
```

```
RULE NAME    ACCT8        GROUP                               MODE PROD (Prod/Test)  
OWNER       N89          SEQUENCE PRIORITY   CONTINUE SEARCH N   (Y/N)  
DESCRIPTION  ALLOW RECREATION OF DATASETS PREFIXED BY N70.NEW.DATASETS.  
DESCRIPTION  
DOCMEM      ACCT8        DOCLIB CTPP.PROD.DOC
```

```
ON DATASET   = N70.NEW.DATASETS*                  And/Or/Not
```

```
DO RECREATE  = YES  
DO
```

```
DAYS                                                DCAL  
                                                    AND/OR  
WDAYS     ALL                                           WCAL  
MONTHS    1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y  
DATES  
CONFCAL           SHIFT
```

```
===== >>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<< =====
```

FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DDOPT, QNOPT 16.27.08

DO RESOURCE: Action Parameter

Modifies the quantity of available resources.

Figure 155 DO RESOURCE Parameter Format

```
DO RESOURCE =  
AT  (CHeck in vols /Mount /Open / CLose /Abend CLose /Keep)
DO 
```

Optional. Type **RESOURCE** (or its abbreviation **RES**) in the DO field and press **Enter**. The DO RESOURCE statement consists of the following subparameters:

Table 157 DO RESOURCE Subparameters

Subparameters	Description
<i>name</i>	The name of the resource whose quantity is to be changed (1 through 20 characters). No blanks (except trailing blanks) are allowed. Mandatory.
<i>quantity</i>	The quantity must be a 1 to 4 digit number (0 is permitted). Mandatory. To the right of the quantity, specify one of the following: <ul style="list-style-type: none"> ■ + — Increases the quantity by the specified amount. ■ - — Decreases the quantity by the specified amount. blank—Sets a new quantity for the resource.
AT	The operation is performed if the specified event occurs. The shortest unique abbreviation can be specified. Valid values are: <ul style="list-style-type: none"> ■ Check in Volumes (CH) — An external volume is checked in either automatically, or manually by screen TC. ■ Mount (M) — The media is mounted by the operator. Supported only if Y (Yes) or M (Mount) was specified for CONTROL-M/Tape installation parameter DYNWTO. ■ Open (O) — The data set is opened. ■ Close (CL) — The data set is closed. ■ Abend/Close (A) — The data set is closed due to an abend. ■ Keep (K) — The media is dismounted and returned by the operator. Supported only if Y (Yes) or K (Keep) was specified for CONTROL-M/Tape installation parameter DYNWTO.

I



NOTE

Open, Close or Abend Close apply only for data set creation events.

Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name, since this information is not available from the Keep message.

General Information

The DO RESOURCE statement adjusts the quantity of resources available at the site (for example, tape drives, CPU, or DB access). Upon rule activation, CONTROL-M/Tape can change the quantity of an IOA Quantitative resource.

DO RESOURCE cannot be used to add new resources.

Multiple DO RESOURCE statements can be specified in a single rule.

AutoEdit variables embedded in the specified resource name are automatically resolved (replaced) at time of rule activation. For information about AutoEdit variables, see Appendix C.

Example

Quantitative resource FREE-SLOTS is decreased whenever a volume is checked in.

Figure 156 DO RESOURCE Parameter Example

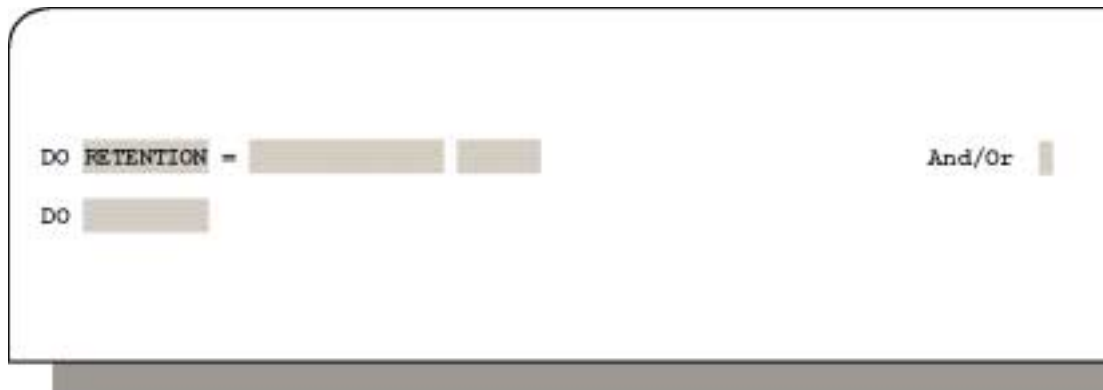
RULE: FREESLOT LIB CTT.PROD.RULES				TABLE: RULE1	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	FREESLOT	GROUP	MODE PROD (Prod/Test)		
OWNER	N44	SEQUENCE	PRIORITY 01	CONTINUE SEARCH Y	(Y/N)
DESCRIPTION	THIS RULE DECREASES THE NUMBER OF FREE SLOTS WHEN A VOLUME				
DESCRIPTION	DESCRIPTION IS CHECKED IN				
DOCMEM	FORGNVOL	DOCLIB	CTT.PROD.DOCS		
=====					
ON DATASET	= *			And/Or/Not	
=====					
DO RESOURCE	= FREE-SLOTS		0001	-	
	AT	CHECK IN VOLUMES			
DO					
=====					
=====					
DAYS				DCAL	
				AND/OR	
WDAYS	ALL			WCAL	
MONTHS	1-	Y	2- Y	3- Y	4- Y
	5- Y	6- Y	7- Y	8- Y	9- Y
	10- Y	11- Y	12- Y		
DATES					
FILL IN RULE DEFINITION. CMDs: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				08.14.25	

DO RETENTION: Action Parameter

Specifies a period during that a data set is protected from being scratched or overwritten.

Figure 157 DO RETENTION Parameter Format

The image shows a screenshot of a user interface for setting the DO RETENTION parameter. It features two input fields. The first field contains the text 'DO RETENTION = ' followed by a light gray rectangular box. To the right of this box is another light gray rectangular box containing the text 'And/Or '. Below the first field is a second input field containing the text 'DO ' followed by a light gray rectangular box. The entire interface is enclosed in a rounded rectangular frame.

Optional. Type **RETENTION** (or its abbreviation **RET**) in the DO field and press **Enter**. Specify a retention type to the right of the = prompt. Using the And/Or subparameter a maximum of three retention types can be specified.

Depending on the retention type specified, different subparameters are displayed.

The retention types and their abbreviations, descriptions, and subparameters are listed below:

General Information

Table 158 DO RETENTION Types (part 1 of 3)

Type	Description
CYCLE (CY)	<p>Retention is based on the number of cycles (meaning, versions, or generations) of a data set. For a more detailed explanation, see the CYCLECNT parameter in the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>Syntax: CYCLES=<i>number_cycles</i> where <i>number_cycles</i> is the number of cycles of a data set. A maximum of 4 digits can be specified. Mandatory. After the number of cycles is entered, the PREFIX field is displayed.</p> <p>The value in the PREFIX field determines whether data set versions are identified according to their prefixes (as specified in the ON DATASET statement), or according to their full names, for counting cycles. Mandatory. Valid values:</p> <ul style="list-style-type: none"> ■ Y (Yes) – Consider data sets with the same prefix as versions of the same data set, and make a unified count of all versions (for example, assuming prefix mask BKP*, make a single count of versions of data sets BKP01 and BKP02). ■ N (No) – Ignore prefixes, and consider the entire data set name (for example, count versions of BKP01 separately from versions of BKP02). <p>And/Or – When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described on page 265.</p> <p>Note: For MVS GDG data sets, always use PREIX=N.</p>
DATE (DAT)	<p>Retention is based on a specific expiration date.</p> <p>Syntax: DATE=<i>expire_date</i> where <i>expire_date</i> is the expiration date. If date is specified at the same time as the retention type, date must be specified in 6-digit or 8-digit format according to the site standard. For example, the date can be specified in mmddyy or mmddyyyy format. Mandatory. Alternatively, the date can be specified in a 4-digit format, and the YEAR field is displayed. For example, specify mmdd and press Enter; the YEAR field is displayed. Specify the YEAR parameter in 2-digit (yy) or 4-digit (yyyy) format.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described on page 265.</p>

Table 158 DO RETENTION Types (part 2 of 3)

Type	Description
DAYS (DAY)	<p>Retention is based on the number of days since the data set was created.</p> <p>Syntax: DAYS=<i>number_days</i> where <i>number_days</i> is the number of days since the data set was created. A maximum of 4 digits can be specified. Mandatory. And/Or-When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
EDM (ED)	<p>Retention is controlled by an External Data Manager (EDM). No subparameters are specified with this retention type. No other retention types can be combined with this retention type (meaning, using And/Or).</p>
JCL EXPDT (J)	<p>Retention is based on the expiration date specified in the JCL EXPDT, RETPD or DATACLAS parameter.</p> <p>And/Or-When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
LAST ACCESS (L)	<p>Retention is based on the number of days since the data set was last accessed.</p> <p>Syntax: LAST ACCESS=<i>number_days</i> where <i>number_days</i> is the number of days since the data set was last accessed. A maximum of 4 digits can be specified. Mandatory. And/Or-When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
MVS CATALOG (M or CA)	<p>Retention is based on the existence of the data set in the operating system catalog. If the catalog still controls the data set, the data set is retained by CONTROL-M/Tape. Otherwise, the data set is no longer retained by CONTROL-M/Tape.</p> <p>And/Or-When A (And) or O (Or) is specified, an additional retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

Table 158 DO RETENTION Types (part 3 of 3)

Type	Description
PERMANENT (P)	<p>Data set is retained indefinitely. This retention type allows manual data set or volume expiration by the EXPIRE option in the Inquire/Update screen.</p> <p>No subparameters are specified with this retention type.</p> <p>No other retention types can be combined with this retention type (meaning, using And/Or).</p>
RET FROM VAULT (R)	<p>Retention is based on the volume's return from the vault (meaning, as soon as the volume is sent back to the MAINLIB library, it is expired).</p> <p>No subparameters are specified with this retention type.</p> <p>No other retention types can be combined with this retention type (meaning, using And/Or).</p>

Only one DO RETENTION statement can be specified per rule definition. A maximum of three retention criteria can be specified per DO RETENTION statement.

For retention periods based on expiration dates (meaning, retention type DATE), the retention period of a volume is based on the expiration dates of all its data sets. A volume is scratched only when all data sets on the volume have scratch status (meaning, their expiration dates have passed).

The expiration conditions for each data set are set at time of data set creation according to parameter DO RETENTION. When the expiration conditions have been satisfied, the data set can be overwritten – even if the data set is located on a non-scratch volume.

When a data set is opened, CONTROL-M/Tape scans the rules to determine abend retention expiration dates. If a system abend occurs before the normal close of the data set, the current generation of the data set is the expiration date specified by parameter DO ABENDRET. For additional information, see DO ABENDRET in this chapter.

When a data set is closed normally, CONTROL-M/Tape scans the rules to determine normal retention expiration dates.

For additional information on retention periods, see [“Retention Management” on page 438](#).

CYCLES Retention Type

The expression DO RETENTION=CYCLES specifies that CONTROL-M/Tape should retain a specified number of versions of a data sets. Depending on conventions in use at the site, different versions of the same data set can be distinguished by a unique identifier (for example, time stamp) appended to a prefix in the data set name. In such cases, different versions of the same data set are the same prefix, but their full names are different.

Therefore, when counting data set cycles, it is necessary to instruct CONTROL-M/Tape whether to identify data sets by their entire name, or by the prefix specified in the ON DATASET statement. This is done by subparameter PREFIX. Specifying PREFIX Y instructs CONTROL-M/Tape to take a unified count of all data set versions with the same prefix. Specifying N (No) instructs CONTROL-M/Tape to identify data set versions by their full name.

If a DO RETENTION statement and a DO ABENDRET statement are included in a rule definition and both these statements specify the CYCLES retention type, the value for subparameter PREFIX in these statements must be identical. The setting for subparameter PREFIX however, does not have to match the setting for this subparameter in a DO VAULT statement specifying the CYCLES retention type.

Multiple Retention Types

The Dynamic Stacking facility uses only the first retention parameter to determine the volumes on that a data set can be stacked. If installation parameter STKMODE is set to R or A and multiple retention types (meaning, DATE or DAYS and other retention types) are specified, it is recommended that the DATE or DAYS retention parameter be specified first.

Examples

Example 1

```
ON DATASET=BKP*
DO RETENTION=CYCLES 0010 PREFIX Y
```

- There are five versions of file BKP001.
- There are three versions of file BKPACCT.
- There are two versions of file BKP.

If another version of any of these files is created, they will have exceeded their retention period (ten cycles) and the oldest version is scratched.

Example 2

```
ON DATASET=BKP*
DO RETENTION CYCLES 0010 PREFIX N
```

- There are five versions of file BKP001.
- There are three versions of file BKPACCT.
- There are two versions of file BKP.

If another version of any of these files is created, their individual counts will not have exceeded their retention period (ten cycles). Therefore, all the versions of the files are retained.

Example 3

Save (retain) backup volumes or data sets for one year (365 days).

Figure 158 DO RETENTION Parameter Example 3

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 03	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0365		And/Or	
DO ABENDRET	= DAYS	0010		And/Or	
DO					
=====					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS			WCAL		
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

Example 4

Save (retain) backup volumes or data sets as long as all of the following conditions are true:

- Not more than 4 days have passed since the data set was last accessed.
- Not more than 6 generations of the same data set have been created.
- The expiration date specified in the JCL EXPDT field has not passed.

If any of these conditions are not true, the volume or data set is expired. In this example, if 5 days have passed since the data set was last accessed, or if the expiration date specified in the JCL EXPDT field has passed, the data set is expired.

Figure 159 DO RETENTION Parameter – Example 4

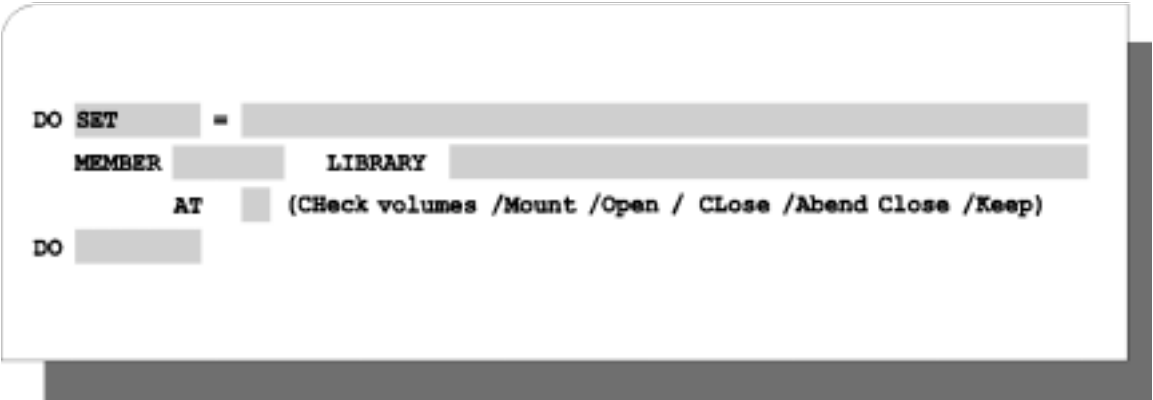
RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)		
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y (Y/N)		
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= LAST ACCESS	0004		And/Or	A
	CYCLES	0006	PREFIX Y (Y/N)	And/Or	A
	JCL EXPDT				
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or	
DO					
=====					
=====					
DAYS	ALL			DCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

DO SET: Action Parameter

Assigns a value to an AutoEdit variable.

Figure 160 DO SET Parameter Format



Optional. Type SET (or its abbreviation SE) in the DO field and press **Enter**. The following subparameters are displayed:

Table 159 DO SET Subparameters (part 1 of 2)

Parameter	Description
<i>equation</i>	A valid DO SET statement can be specified to the right of the = prompt in one of the following formats: <ul style="list-style-type: none">■ %%user-symbol = value or <ul style="list-style-type: none">■ %%user-symbol = expression where <ul style="list-style-type: none">■ %%user-symbol is a valid user-defined AutoEdit variable■ expression is a valid combination of constants, AutoEdit operators, functions, and Global or System variables that are resolved before assignment
MEMBER	Name of the AutoEdit member (1 through 8 characters). Mandatory.

Table 159 DO SET Subparameters (part 2 of 2)

Parameter	Description
LIBRARY	Name of the library in that the AutoEdit member resides (1 through 44 characters). Mandatory.
AT	<p>The operation is performed if the specified event occurs. The shortest unique abbreviation can be specified. Mandatory. Valid values are:</p> <ul style="list-style-type: none"> ■ Check in Volumes (CH)—An external volume is checked in either automatically, or manually by screen TC. ■ Mount (M)—The media is mounted by the operator. Supported only if Y (Yes) or M (Mount) was specified for CONTROL-M/Tape installation parameter DYNWTO. ■ Open (O)—The data set is opened. ■ Close (CL)—The data set is closed. ■ Abend/Close (A)—The data set is closed due to an abend. ■ Keep (K)—The media is dismounted and returned by the operator. Supported only if Y (Yes) or K (Keep) was specified for CONTROL-M/Tape installation parameter DYNWTO.

NOTE

Open, Close or Abend Close apply only for data set creation events.

Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name, since this information is not available from the Keep message.

General Information

To take full advantage of this parameter, a familiarity with CONTROL-M/Tape AutoEdit variables is essential.

The DO SET statement permits values to be set for variables.

Multiple DO SET statements can be included in each rule definition.

CONTROL-M/Tape AutoEdit variables assigned or embedded in a DO SET statement are resolved (replaced) during rule activation.

Variables can be referenced by other INCONTROL products. For more information regarding the use of AutoEdit variables, see [Appendix B, “AutoEdit Variables,”](#)

Example

Set variables %%DATASET and %%VOLUMES in member CURRENCY in library CTM.PROD.PARM to reflect the current checked-in data set and its volumes.

The forced job can use these values by setting %%LIBSYM and %%MEMSYM to the updated member and library.

Figure 161 DO SET Parameter Example

RULE: FORGNDSN LIB CTT.PROD.RULES				TABLE: FOREIGN	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	FORGNDSN	GROUP		MODE	PROD (Prod/Test)
OWNER	N73	SEQUENCE	PRIORITY 01	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION	THIS RULE UPDATES THE MEMBER CURRENCY IN CTT.PROD.PARM				
DESCRIPTION	LIBRARY, WITH THE DSNAME AND VOLUME OF THE CHECKED IN				
DESCRIPTION	VOLUME, AND FORCES THE FORGNREP JOB.				
DESCRIPTION					
DOCMEM	FORGNDSN	DOCLIB	CTT.PROD.DOCS		
=====					
ON DATASET	= FOREIGN.CURRENCY.FILE*			And/Or/Not	
=====					
DO SET	= %%DATASET=%%DSNAME				
	MEMBER CURRENCY	LIBRARY	CTT.PROD.PARM		
	AT	CHECK IN VOLUMES			
DO SET	= %%VOLUMES=(%%JCLVOL)				
	MEMBER CURRENCY	LIBRARY	CTT.PROD.PARM		
	AT	CHECK IN VOLUMES			
DO FORCEJOB	=	TABLE	FOREIGN	JOB FORGNREP	DATE ODAT
		LIBRARY	CTM.PROD.SCHEDULE		
	AT	CHECK IN VOLUMES			
DO					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					17.32.15

DO SHOUT: Action Parameter

Sends a user notification message to a particular destination.

Figure 162 DO SHOUT Parameter Format

```

DO SHOUT - TO URGENCY
MESSAGE
AT (Check in vols /Mount /Open / CClose /Abend CClose /Keep)
DO
  
```

Optional. Type **SHOUT** (or its abbreviation **SH**) in the DO field and press **Enter**. The following subparameters are displayed:

Table 160 DO SHOUT Subparameters (part 1 of 3)

Subparameter	Description
TO	<p>Destination of the message (1 through 16 characters). Mandatory. Valid values:</p> <ul style="list-style-type: none"> ■ U-<i>userid</i> or USERID-<i>userid</i>—Writes the message to the IOA Log file under the specified user ID. <i>userid</i> must be 1 through 8 characters. For more detailed information regarding route and descriptor codes, refer to the IBM publication <i>Routing and Descriptor Codes</i>, GC38-1102. ■ OPER[<i>n</i>]—Sends a rollable message to the operator console. <i>n</i> is an optional 2-digit route code. For more detailed information regarding route and descriptor codes, refer to the IBM publication <i>Routing and Descriptor Codes</i>, GC38-1102. ■ OPER2[<i>n</i>]—Sends an unrollable, highlighted message to the operator console. <i>n</i> is an optional 2-digit route code. For more detailed information regarding route codes, refer to the IBM publication <i>Routing and Descriptor Codes</i>, GC38-1102. ■ U-M – sends a message to an email destination. In order to send an email, sample exit IOAX034M should be implemented. The destination must start with "U-M:". <p>Refer to the description of sample exits IOAX034M and IOAMAIL in the <i>INCONTROL for z/OS Administrator Guide</i>.</p>

Table 160 DO SHOUT Subparameters (part 2 of 3)

Subparameter	Description
	<p>■ TSO - <i>loginid</i> [<i>;Nn</i> <i>;Mm</i> <i>;NnMm</i> <i>;Lname</i>] – Sends the message to the specified ID (logonid). ID is mandatory (1 through 7 characters).</p> <p>An optional second value, indicating the computer and/or node (such as <i>Nn</i>) of the TSO logonid, can be specified, as follows:</p> <p>Under JES2: Valid values are <i>Nn</i>, <i>Mm</i> or <i>NnMm</i>, where:</p> <ul style="list-style-type: none"> — <i>m</i> is the machine ID (the computer in JES2, not the 4-character SMF ID). For more information, see Step 6.3 of ICE, as described in the IOA installation chapter of the <i>INCONTROL for z/OS Installation Guide</i>. — <i>n</i> is the 1 to 2 character JES/NJE node ID. <p>Under JES3: The only valid value is <i>Lname</i>, where <i>Lname</i> is the logical JES name of the machine (that is, the name as used in JES3 command *T, not the SMF system ID).</p> <p>For more information, see Step 6.3 of ICE, as described in the IOA installation chapter of the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>Note: A shout to a TSO user performs a TSO SEND command that may require authorization at the receiving node.</p>
URGENCY	<p>Determines the priority level of the message. Valid values:</p> <ul style="list-style-type: none"> ■ R — Regular. Default. ■ U — Urgent. ■ V — Very urgent.
MESSAGE	<p>Message text. Maximum length: 62 characters.</p> <p>AutoEdit variables (both system and user-defined) are supported and automatically resolved (replaced) when the SHOUT message is issued. For AutoEdit usage information, see the <i>KeyStroke Language (KSL) User Guide</i>.</p>

Table 160 DO SHOUT Subparameters (part 3 of 3)

Subparameter	Description
AT	<p>The operation is performed if the specified event occurs. The shortest unique abbreviation can be specified.</p> <ul style="list-style-type: none"> ■ Check in Volumes (CH) – An external volumes is checked in either automatically, or manually by screen TC. ■ Mount (M) – The media is mounted by the operation. <p>Supported only if Y (Yes) or M (Mount) was specified for CONTROL-M/Tape installation parameter DYNWTO.</p> <ul style="list-style-type: none"> ■ Open (O)–The data set is open. ■ Close (CL)–The data set is closed. ■ Abend Close (A)–The data set is closed due to an abend. ■ Keep (K)–The media is dismounted. <p>Supported only if Y (Yes) or K (Keep) was specified for CONTROL-M/Tape installation parameter DYNWTO</p> <p>Notes: Open, Close or Abend Close apply only for data set creation events.</p> <p>Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name, since this information is not available from the Keep message.</p>

General Information

The message is sent to the required destination when the accompanying ON statement criteria are satisfied.

Multiple DO SHOUT statements can be specified in a rule definition.

Subparameter TO

Set TO to USERID-userid to write the message to the IOA Log file under the user ID specified in the parameter.

Set TO to OPER[-n] to send the message to the operator console (route code n). If the n value is omitted, the message is sent to all consoles to which route codes 1 or 11 are assigned. For more detailed information regarding route and descriptor codes, refer to the IBM publication *Routing and Descriptor Codes*, GC38-1102.

Set TO to OPER2[-n] to send a highlighted, unrollable message is sent to the operator console (route code n). If the n value is omitted, the message is sent to all consoles to which route codes 1 or 11 are assigned. For more detailed information regarding route and descriptor codes, refer to the IBM publication *Routing and Descriptor Codes*, GC38-1102.

Set TO to TSO-id or T-id to send the message to the logonid. The Shout facility first searches the IOA Dynamic Destination table for the specified ID. If the table contains an entry that matches the value, the entry's content is used as the target for the shouted message. (The entire TO field is used. Therefore, when directing the message to a remote user, do not append Nn or Mm. Instead, do this in the IOA Dynamic Destination table itself). For more information, see the discussion of the Dynamic Destination table in the IOA administration chapter of the *INCONTROL for z/OS Administrator Guide*.

If no matching ID is found in the Dynamic Destination table, the Shout facility assumes the specified ID is a logonid. It then creates a TSO message that it hands over to the operating system, which sends the message to that logonid.

NOTE

If the logonid does not exist, the operating system cannot send the message, but no error message is generated.

When a second value is used, the message is sent to the TSO logon ID in the specified computer or node (that is, the machine ID). To determine the machine ID under JES2, specify JES command \$LSYS.

Subparameter URGENCY

The URGENCY value indicates the urgency level of the message.

In addition, if the destination is USERID-*userid* (or U-*userid*), the user can control, according to urgency, which messages are displayed when the IOA Log file is accessed. Urgent and very urgent messages are highlighted on the screen. For more details, see “IOA Log Facility” in Chapter 2.

Example

Shout a message to user N73 whenever a new tape is checked into the CONTROL-M/Tape Media Database or whenever data set FOREIGN.CURRENCY.REPORT is closed under abend.

Figure 163 DO SHOUT Parameter Example

```

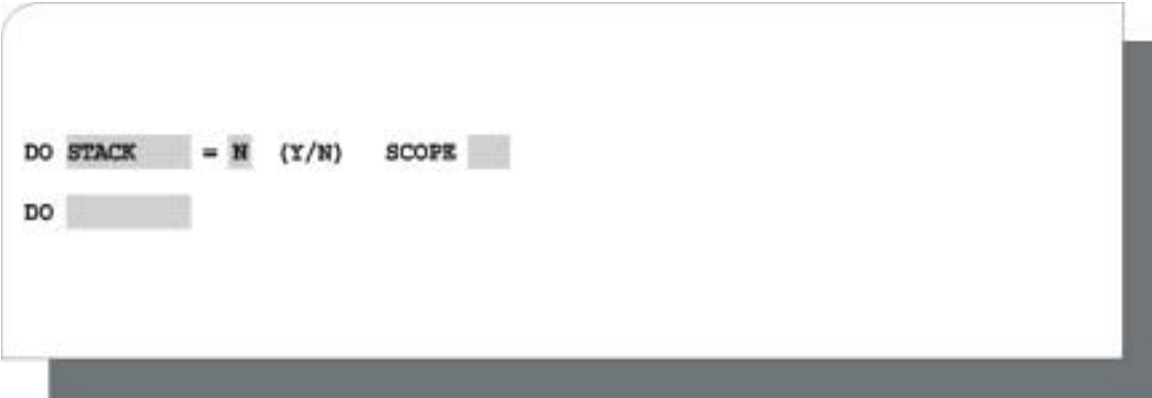
RULE: FORGNREP LIB CTT.PROD.RULES                                TABLE: FOREIGN
COMMAND ===>                                                    SCROLL===> CRSR
-----
RULE NAME  FORGNREP  GROUP                                MODE PROD (Prod/Test)
OWNER      N37       SEQUENCE PRIORITY 01 CONTINUE SEARCH Y   (Y/N)
DESCRIPTION THIS RULE FORCES A CONTROL-M JOB THAT READS THE FOREIGN
DESCRIPTION CURRENCY REPORT THAT IS CHECKED INTO THE SYSTEM.
DOCMEM     FORGNREP  DOCLIB CTT.PROD.DOCS
=====
ON DATASET  = FOREIGN.CURRENCY.REPORT                        And/Or/Not
=====
DO FORCEJOB  = TABLE  FOREIGN      JOB FORGNREP            DATE  ODAT
              LIBRARY CTM.PROD.SCHEDULE
              AT   CHECK IN VOLUMES
DO SHOUT    = TO TSO-N73          URGENCY  R
MESSAGE     CONTROL-M/TAPE RECEIVED A NEW FOREIGN TAPE %%VOL001
              AT   CHECK IN VOLUMES
DO SHOUT    = TO TSO-N73          URGENCY  V
MESSAGE     PROCESSING OF FOREIGN.CURRENCY.REPORT ABENDED.
              AT   CLOSE AFTER ABEND
DO
=====
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT 19.30.34

```

DO STACK: Action Parameter

Indicates whether to stack a data set. (A data set is stacked by adding it to a volume that already contains one or more data sets.)

Figure 164 DO STACK Parameter Format



Optional. Type **STACK** (or its abbreviation **STA**) in the DO field and press **Enter**. Specify Y or N to the right of the = prompt.

- Y (Yes) – Stacking is performed.
- N (No) – Stacking is not performed.

If the expression DO STACK=N is specified, the following subparameter is displayed:

Table 161 DO STACK Subparameter

Subparameter	Description
SCOPE	Indicates whether to allow stacking of other data sets with the current data set. Mandatory. Valid values are: <ul style="list-style-type: none">■ D (DSN) — Allow stacking of other data sets on the same volume as the current data set.■ V (VOL) — Do not allow stacking of other data sets on the same volume as the current data set.

General Information

Only one DO STACK statement can be specified per rule definition.

Stacking directs a data set dynamically at the time of its creation to a volume that already contains one or more data sets but has space available. This enables more complete utilization of free space on active tapes in your library.

If a rule contains the expression `DO STACK=Y`, CONTROL-M/Tape implements real-time (Dynamic) data set stacking (provided environmental conditions permit stacking to be performed).

If a rule contains the expression `DO STACK=N`, CONTROL-M/Tape does not stack the data set, unless a more specific, or higher priority, rule that applies to the data set contains the expression `DO STACK=Y`.

If a rule contains the expression `DO STACK=N` and `SCOPE DSN`, CONTROL-M/Tape may later stack other data sets on the same volume as the current data set. In other words, the current data set is the first, but not necessarily the only, data set on the volume.

If a rule contains the expression `DO STACK=N` and `SCOPE VOL`, CONTROL-M/Tape does not stack other data sets on the same volume as the current data set. In other words, the current data set is the first and only data set on the volume.

If a rule does not contain a `DO STACK` statement, CONTROL-M/Tape does not stack the data set unless another rule that applies to the data set contains the expression `DO STACK=Y`.

NOTE



Using the expression `DO STACK=N` with `SCOPE DSN` is equivalent to the expression `DO STACK=N` prior to version 5.1.4.

Under JES3, the expression `DO STACK=Y` can be specified only with selection criteria `ON DATASET`, `ON JOBNAME`, and/or `ON USERID`.

To stack data sets, CONTROL-M/Tape tracks and calculates the average size of each data set (on the basis of the sizes of the various versions of the data set). This information is stored in the Stacking Database. Based on the average size, CONTROL-M/Tape estimates whether a data set will fit on a specific volume.

When a data set is written to a volume, CONTROL-M/Tape calculates the remaining space on the volume. This calculation is based on the volume's capacity and the sizes of the data sets that the volume contains. By calculating the remaining space on a volume, CONTROL-M/Tape can determine whether it is possible to stack a data set.

Using these calculations, when a job that creates a data set is submitted, CONTROL-M/Tape checks if the data set can be stacked. If so, CONTROL-M/Tape modifies the job's JCL to direct the data set to a suitable volume.

For additional information about stacking, see the data set stacking chapter of the CONTROL-M/Tape Implementation Guide.

Example

Enable stacking for all data sets.

Figure 165 DO STACK Parameter Example

RULE: STARTSTK LIB CTT.PROD.RULES										TABLE: PRD0002									
COMMAND ===>										SCROLL===> CRSR									

RULE NAME		STARTSTK		GROUP PRODUCTION		MODE PROD (Prod/Test)													
OWNER		M43A		SEQUENCE PRIORITY 01		CONTINUE SEARCH Y (Y/N)													
DESCRIPTION		THIS RULE ENABLES STACKING FOR ALL DATA SETS.																	
DESCRIPTION																			
DOCMEM		STARTSTK		DOCLIB CTT.PROD.DOCS															
=====																			
DOC																			
=====																			
ON DATASET		= *										And/Or/Not							
=====																			
DO STACK		= Y																	
DO																			
=====																			
=====																			
DAYS		ALL										DCAL							
										AND/OR									
WDAYS												WCAL							
MONTHS		1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y																	
DATES																			
CONFCAL		SHIFT																	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT										15.49.41									

DO STKDEFSZ: Action Parameter

Assigns a default size in megabytes for the data set to be stacked.

Figure 166 DO STKDEFSZ Parameter Format

```
DO STKDEFSZ =  OVERWRITE STATISTICS 
DO 
```

Optional. Type **STKDEFSZ** (or its abbreviation **STKD**) in the DO field and press **Enter**. The following subparameter fields are displayed:

Table 162 DO STKDEFSZ Subparameters

Subparameter	Description
<i>def_size</i>	Default size for the data set in megabytes. Mandatory. A size from 1 to 9999 can be specified. To indicate that there is no default size, specify 0.
OVERWRITE STATISTICS	Whether statistics for the data set are overridden by the STKDEFSZ value. Mandatory. Valid values are: <ul style="list-style-type: none"> ■ YES—Use the STKDEFSZ value to override existing statistics for the data set. ■ NO—If statistics already exist for the data set, use them and not the STKDEFSZ value.

Only one DO STKDEFSZ statement can be specified per rule.

General Information

Data sets are normally stacked according to statistics in the CONTROL-M/Tape Stacking Database. This database is maintained by the stacking statistics utility CTTSTK that is usually run as part of the CONTROL-M/Tape New Day procedure.

If no statistics have been gathered for a data set, a default number of megabytes is used to calculate how much space is needed to stack the data set. The default number of megabytes may be specified by either a DO STKDEFSZ statement in a CONTROL-M/Tape rule, or by the STKDEFSZ installation parameter.

For more information about stacking statistics, see the description of the CTTSTK utility in the CONTROL-M/Tape utilities chapter of the INCONTROL for z/OS Utilities Guide.

Logic for Determining Size of a Data Set to be Stacked

CONTROL-M/Tape searches for a size for a data set to be stacked in the following locations. The first location that contains a value for size of the data set is used to stack the data set.

- a DO STKDEFSZ statement in a CONTROL-M/Tape rule (if OVERRIDE STATISTICS is set to YES)
- the Stacking Database (called the Stacking Statistics file prior to version 5.1.4)
- a DO STKDEFSZ statement in a CONTROL-M/Tape rule (if OVERRIDE STATISTICS is set to NO)
- CONTROL-M/Tape installation parameter STKDEFSZ (in the CTTARM parameter)

If no value is found in any of the above locations, the data set is not stacked.

Example

Stack data sets prefixed by N70.DAILY.*. If no average size is available in the Stacking Database, use a default size of 100 megabytes.

Figure 167 DO STKDEFSZ Parameter Example

[illegible]

DO STKGROUP: Action Parameter

Specifies a stacking group for the data set.

Figure 168 DO STKGROUP Parameter Format

Optional. Type **STKGROUP** (or its abbreviation **STKG**) in the DO field and press **Enter**. The following subparameter must be specified to the right of the = prompt:

Table 163 DO STKGROUP Subparameter

Subparameter	Description
<i>stack_grp</i>	<p>Name of the stacking group to which the data set is assigned. Valid values are:</p> <ul style="list-style-type: none"> ■ <i>name</i> — Specific name of the stacking group to which the data set is assigned. The data set is only stacked with other data sets in the same stacking group. A name of 1 to 8 characters can be specified. No leading or embedded blanks can be included in this value. ■ * ANY—Indicates that the data set can be stacked with members of any stacking group.

Only one DO STKGROUP statement can be specified in each CONTROL-M/Tape rule.

General Information

If no DO STKGROUP statement is specified for a data set, that data set is assigned an unnamed default group, and can only be stacked with other data sets that have been assigned to that default group.

The following steps describe how stacking groups influence the logic used to choose a volume on which to stack a data set:

1. When a volume is first considered for stacking a data set, CONTROL-M/Tape checks if the volume belongs to the same pool as the data set to be stacked.
2. CONTROL-M/Tape next checks if the data sets already on the volume belong to the same group as the data set to be stacked (or have a group specification of *ANY).
3. If the data sets on the volume belong to an appropriate group, CONTROL-M/Tape checks for DO STKRULE statements that might disallow stacking of the current data set with the data sets on the candidate volume.
4. If no DO STKRULE statements prohibit stacking on the current volume, the data set is stacked on the current volume.

NOTE



If data sets that are assigned to two different groups are forcibly stacked together on one volume (for example, using CONTROL-M/Tape Batch Stacking utility CTTSD), no additional data sets can be stacked on that volume (unless *ANY is specified for those data sets)

Example

Assign a stacking group of STKGRP1 for all data sets whose prefix is N70.ACCT.

Figure 169 DO STKGROUP Parameter Example

RULE: ACCT1		LIB CTT.PROD.RULES		TABLE: SAMPLES	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	ACCT1	GROUP		MODE PROD (Prod/Test)	
OWNER	N89	SEQUENCE	PRIORITY	CONTINUE SEARCH N	(Y/N)
DESCRIPTION	ASSIGN A STACKING GROUP FOR ALL DATASETS PREFIXED BY N70.ACCT				
DESCRIPTION					
DOCMEM	ACCT1	DOCLIB	CTTP.PROD.DOC		
=====					
DOC					
=====					
ON DATASET	= N70.ACCT*			And/Or/Not	
=====					
DO STKGROUP	= STKGRP1				
DO STKMXMLBL	= 9999				
DO					
=====					
=====					
DAYS				DCAL	
				AND/OR	
WDAYS	ALL			WCAL	
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
DATES					
FILL IN RULE DEFINITION. CMDs: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				11.26.56	

DO STKMODE: Action Parameter

Determines the algorithm used to search for a volume on which to stack the data set.

Figure 170 DO STKMODE Parameter Format

```
DO STKMODE =
DO
```

Optional. Type **STKMODE** (or its abbreviation **STKMO**) in the DO field and press **Enter**. Specify one of the following values to the right of the = prompt:

Table 164 DO STKMODE Parameter Values

Value	Description
S (SIMPLE)	Search for volumes from the same pool only. Data sets and volumes intended for vaulting are not eligible for stacking.
V (VAULT)	Search for volumes from the same pool that have a vaulting pattern similar to the data set to be stacked. If the data set is to be vaulted, only volumes that have the same vault pattern are considered. If the data set is not to be vaulted, only volumes that are not to be vaulted are considered.
R (RETENTION)	Search for volumes from the same pool that have a retention date that is the same or later than the retention date of the data set. Note: A permanent retention data set can be stacked on a volume only if the last data set on the volume has permanent retention.
A (ALL)	Satisfies the requirements of both V and R (described above).

Only one DO STKMODE statement can be specified per rule.

General Information

The value specified in statement DO STKMODE indicates how the Dynamic Dataset Stacking facility should search for a volume on which to stack the data set or data sets whose access triggered this rule. The selected search method can influence volume utilization and the resources required to search the Media Database for a matching volume.

If no DO STKMODE statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter STKMODE determines the algorithm that is used to stack the data set.

NOTE

Installation parameter STKMODE was called DYNSTYP prior to version 5.1.4.



Example

When stacking data sets prefixed by N70.DAILY, search for destination volumes with vaulting and retention information that match the vaulting and retention requirements of the data set to be stacked.

Figure 171 DO STKMODE Parameter Example

RULE: ACCT11 LIB CTPP.PROD.RULES				TABLE: SAMPLES	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	ACCT11	GROUP	MODE PROD (Prod/Test)		
OWNER	N70B	SEQUENCE PRIORITY	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	SEARCH FOR VOLUMES WITH MATCHING VAULT AND RETENTION INFORMATION				
DESCRIPTION	WHEN STACKING DATASETS PREFIXED BY N70.DAILY.				
DESCRIPTION					
DOCMEM	ACCT11	DOCLIB	CTPP.PROD.DOC		
=====					
ON DATASET	= N70.DAILY.*			And/Or/Not	
=====					
DO STACK	= Y (Y/N)				
DO STKMODE	= ALL				
DO					
=====					
=====					
DAYS			DCAL		
			AND/OR		
WDAYS	ALL			WCAL	
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
DATES					
CONFCAL	SHIFT				
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				09.12.26	

DO STKMXMLBL: Action Parameter

Indicates a maximum number of data sets that can be stacked on a single volume or on a group of volumes.

Figure 172 DO STKMXMLBL Parameter Format



Optional. Type **STKMXMLBL** (or its abbreviation **STKMXML**) in the DO field and press **Enter**. Specify the maximum label number to the right of the = prompt.

The value specified for this parameter must be numeric. A number from 2 through 9999 can be specified.

General Information

DO STKMXMLBL specifies the maximum label count per volume or group of volumes when the data set is to be stacked using the Dynamic Dataset Stacking facility. A volume or group of volumes that already has this number of data sets is not eligible for dynamic stacking.

Example

Stack data sets with a prefix of N70.ACCT only on volumes or groups of volumes with four data sets or less.

Figure 173 DO STKMXMLBL Parameter Example

RULE: ACCT2		LIB CTPP.PROD.RULES		TABLE: SAMPLES	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	ACCT2	GROUP		MODE PROD (Prod/Test)	
OWNER	N89	SEQUENCE PRIORITY		CONTINUE SEARCH N	(Y/N)
DESCRIPTION STACK DATASETS WITH A PREFIX OF N70.ACCT ON VOLUMES WITH NO					
DESCRIPTION MORE THAN FOUR DATASETS					
DESCRIPTION					
DOCMEM	ACCT2	DOCLIB	CTPP.PROD.DOC		
=====					
DOC					
=====					
ON DATASET	= N70.ACCT*			And/Or/Not	
=====					
DO STACK	= Y (Y/N)				
DO STKMXMLBL	= 0005				
DO					
=====					
=====					
DAYS				DCAL	
				AND/OR	
WDAYS ALL				WCAL	
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					12.10.03

DO STKMXVOL: Action Parameter

Specifies the maximum number of volumes in a chain on that the data set can be stacked.

Figure 174 DO STKMXVOL Parameter Format



```
DO STKMXVOL = 
```

```
DO 
```

Optional. Type **STKMXVOL** (or its abbreviation **STKMXV**) in the DO field and press **Enter**. Specify the maximum number of volumes to the right of the = prompt.

General Information

DO STKMXVOL is used with Dynamic Dataset Stacking. When stacking data sets, DO STKMXVOL specifies the maximum number of volumes allowed in multi-volume chains. The number must be in a range from 1 through 9999.

Only one DO STKMXVOL statement can be specified per rule.

If no DO STKMXVOL statement is specified in a rule, an unlimited number of volumes are allowed in multi-volume chains.

Example

Data sets with a prefix of EMPLOYEE.DB.YEAR should only be stacked on volumes in a chain that has no more than two volumes.

```
RULE: ACCT12      LIB CTTT.PROD.RULES                                TABLE: SAMPLES  
COMMAND ===>                                           SCROLL===> CRSR
```

```
RULE NAME    ACCT12        GROUP                                     MODE PROD (Prod/Test)  
OWNER       N70B          SEQUENCE PRIORITY   CONTINUE SEARCH Y     (Y/N)  
DESCRIPTION STACK EMPLOYEE.DB.. DATASETS IN CHAINS OF 2 VOLS MAXIMUM  
DESCRIPTION  
DOCMEM      ACCT12        DOCLIB CTTT.PROD.DOC
```

```
ON DATASET   = EMPLOYEE.DB.YEAR*                                   And/Or/Not
```

```
DO STACK     = Y   (Y/N)  
DO STKMVOL   = 0002  
DO
```

```
DAYS                                               DCAL  
                                                AND/OR
```

```
WDAYS ALL                                             WCAL  
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y  
DATES  
CONFCAL           SHIFT
```

```
===== >>>>>>>>>>>>>>>> END OF RULE DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====  
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT                9.47.01
```

DO STKRULE: Action Parameter

Set a stacking limitation that denies stacking in certain situations.

Figure 176 DO STKRULE Parameter Format

DO STKRULE = NOTWITH JOB

DSN

Optional. Type STKRULE (or its abbreviation STKRU) in the DO field and press **Enter**. A value must be specified for at least one of the following subparameters:

Table 165 DO STKRULE Subparameters

Subparameter	Description
JOB	<p>Name of a job that created data sets with which the current data set is not stacked. Valid values are:</p> <ul style="list-style-type: none"> ■ <i>jobname</i> — Name of a specific job. A job name of up to eight characters can be specified. ■ *SAME — If an ON JOBNAME statement was specified in this rule, *SAME indicates that the data set is not stacked with any other data set created by a job that matches the job name or mask specified in the ON JOBNAME statement. <p>If no ON JOBNAME statement was specified in the rule, this value (*SAME) indicates that the data set is not stacked with other data sets created by the job that created the current data set.</p>
DSN	<p>Name of a data set with which the current data set is not stacked. Valid values are:</p> <ul style="list-style-type: none"> ■ <i>dsname</i> — Name of a specific data set. A data set name of up to 44 characters can be specified. ■ * SAME — The data set is not stacked with any other data set that matches the data set name or mask specified in the ON DATASET statement of the current rule.

Any number of DO STKRULE statements can be specified in one CONTROL-M/Tape rule.

The expression DO STACK=Y must precede the first DO STKRULE statement in a rule. A DO STKRULE statement by itself does not cause CONTROL-M/Tape to stack a data set.

General Information

Statement DO STKRULE indicates limitations regarding the tapes on that the current data set can be stacked.

- If a value is specified for only subparameter JOB, the data set cannot be stacked on a volume that already contains data sets that were created by the specified job name.
- If a value is specified for only subparameter DSN, the data set cannot be stacked on a volume that already contains data sets with the specified data set name.
- If values are specified for both subparameter JOB and subparameter DSN, the data set cannot be stacked on a volume that contains a data set with the specified name that was created by the specified job name.

DO STKRULE statements are applied within the group assigned to the specified data set. For more information about stacking groups, see DO STKGROUP in this chapter.

Example

Data sets with a prefix of N70.ACCT are stacked, but not with the following data sets:

- Data sets created by a job named JOB1
- Data sets named DSN1
- Data sets named DSN2 that were created by a job named JOB2

Figure 177 DO STKRULE Parameter Example

RULE: ACCT3		LIB CTPP.PROD.RULES		TABLE: SAMPLES	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	ACCT3	GROUP		MODE PROD	(Prod/Test)
OWNER	N89	SEQUENCE	PRIORITY	CONTINUE SEARCH	N (Y/N)
DESCRIPTION	INDICATE STACKING RULES FOR DATASETS PREFIXED BY N70.ACCT.				
DESCRIPTION					
DOCMEM	ACCT3	DOCLIB	CTPP.PROD.DOC		
=====					
DOC					
=====					
ON DATASET	= N70.ACCT*			And/Or/Not	
=====					
DO STACK	= Y (Y/N)				
DO STKRULE	= NOT WITH JOB JOB1				
	DSN				
DO STKRULE	= NOT WITH JOB				
	DSN DSN1				
DO STKRULE	= NOT WITH JOB JOB2				
	DSN DSN2				
DO					
=====					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				13.16.46	

DO STKSRCHL: Action Parameter

Specifies a maximum number of volumes that CONTROL-M/Tape should consider for stacking the data set.

Figure 178 DO STKSRCHL Parameter Format



Optional. Type **STKSRCHL** (or its abbreviation **STKS**) in the DO field and press **Enter**. Specify the following subparameter to the right of the = prompt:

Table 166 DO STKSRCHL Subparameter

Subparameter	Description
<i>limit</i>	The maximum number of volumes to search. A number from 0 through 9999 can be specified. A value of 0 indicates that the search is unlimited (meaning, all active volumes are searched).

Only one DO STKSRCHL statement can be specified per rule.

General Information

If the maximum number of volumes is searched and none of them can be used to stack the data set, the data set is written to a scratch volume.

If no DO STKSRCHL statement is specified in a rule, the value specified for CONTROL-M/Tape installation parameter STKSRCHL determines the number of volumes to be considered for stacking the data set.

Example

Search a maximum of 300 volumes when attempting to stack data sets with a prefix of N70.ACCT.

Figure 179 DO STKSRL Parameter Example

RULE: ACCT22		LIB CTPP.PROD.RULES		TABLE: SAMPLES	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	ACCT22	GROUP		MODE	PROD (Prod/Test)
OWNER	N89	SEQUENCE	PRIORITY	CONTINUE SEARCH	N (Y/N)
DESCRIPTION	LIMIT SEARCH FOR STACKABLE VOLUME TO 300 FOR VOLUMES WITH A				
DESCRIPTION	PREFIX OF N70.ACCT.				
DOCMEM	ACCT22	DOCLIB	CTPP.PROD.DOC		
=====					
DOC					
=====					
ON DATASET	= N70.ACCT*			And/Or/Not	
=====					
DO STACK	= Y (Y/N) SCOPE				
DO STKSRL	= 0300				
DO					
=====					
=====					
DAYS				DCAL	
				AND/OR	
WDAYS	ALL			WCAL	
MONTHS	1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				12.10.03	

DO VAULT: Action Parameter

Identifies the name or location and retention specifications of a vault for volume storage.

Figure 180 DO VAULT Parameter Format

```
DO VAULT = [ ] BY BOX [ ] (Y/N)
UNTIL [ ] [ ] And/Or [ ]
DO [ ]
```

Optional. Type the word **VAULT** (or its abbreviation **V**) in the DO field and press **Enter**. The following subparameters are displayed:

Table 167 DO VAULT Subparameters

Subparameter	Description
<i>vault_name</i>	Name of the vault in which the volumes are stored. Mandatory.
BY BOX	Indicates whether the volumes are stored within a box in the vault. Valid values: <ul style="list-style-type: none">■ Y (Yes) — Store the volumes in a box.■ N (No) — Do not store the volumes in a box. Default. Note: When multiple DO VAULT statements are defined, only the first statement displays the BY BOX subparameter.
UNTIL	Depending on the UNTIL type specified, different subparameters are displayed. A maximum of three UNTIL types can be specified.

The UNTIL types and their abbreviations, descriptions, and subparameters are listed below:

Table 168 Types of DO VAULT Subparameter UNTIL (part 1 of 3)

Type	Description
CYCLES (CY)	<p>Vault retention is based on the number of cycles (meaning, versions, generations) of a data set. For a more detailed description, refer to parameter CYCLECNT in the CONTROL-M/Tape chapter of the Customized installation path in the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>Syntax: CYCLES=<i>number_cycles</i> where <i>number_cycles</i> is the Number of cycles. A maximum of 4 digits can be specified. Mandatory. After the number of cycles is entered, the PREFIX field is displayed.</p> <p>The value in the PREFIX field determines whether data set versions are identified according to their prefixes (as specified in the ON DATASET statement), or according to their full names, for counting cycles. Mandatory. Valid values:</p> <ul style="list-style-type: none"> ■ Y (Yes) – Consider data sets with the same prefix as versions of the same data set, and make a unified count of all versions (for example, assuming prefix mask BKP*, make a single count of versions of data sets BKP01 and BKP02). ■ N (No) – Ignore prefixes, and consider the entire data set name (for example, count versions of BKP01 separately from versions of BKP02). <p>And/Or – When A (And) or O (Or) is specified, an additional UNTIL field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p> <p>Note: For MVS GDG data sets, always use PREIX=N.</p>
DATE (DAT)	<p>Vault retention is based on a specific date.</p> <p>Syntax: DATE=<i>expire_date</i> where <i>expire_date</i> is the expiration date. If date is specified at the same time as the vault retention type, the date must be specified in 6-digit or 8-digit format according to the site standard. For example, the date can be specified in mmddyy or mmddyyyy format. Alternatively, the date can be specified in a 4-digit format, and the YEAR field is displayed. For example, specify mmdd and press Enter; the YEAR field is displayed. Specify the YEAR parameter in 2-digit (yy) or 4-digit (yyyy) format.</p> <p>And/Or – And/Or When A (And) or O (Or) is specified, an additional abend retention field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

Table 168 Types of DO VAULT Subparameter UNTIL (part 2 of 3)

Type	Description
DAYS (DAY)	<p>Vault retention is based on the number of days since the volume was created.</p> <p>Syntax: DAYS=<i>number_days</i> where <i>number_days</i> is the Number of days. A maximum of 4 digits can be specified.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional UNTIL field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
EXPIRE (EX)	<p>Vault retention is based on the expiration date of the Vaulting data set. For more information about determination of the Vaulting data set, see the description of CONTROL-M/Tape Retention and Vault parameters in the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>No subparameters are specified with this UNTIL type.</p> <p>No other UNTIL types can be combined with this UNTIL type (meaning, using And/Or).</p>
JCL EXPDT (J)	<p>Vault retention is based on the expiration date specified in the JCL EXPDT, RETPD or DATACLAS parameter.</p> <p>No subparameters are specified with this UNTIL type.</p>
LAST (L)	<p>ACCESS Vault retention is based on the number of days since the vaulting data set was last accessed.</p> <p>The vaulting data set is the data set on the volume that assigns the vaulting pattern to the volume or a chain of volumes. If CONTROL-M/Tape installation parameter VLTBYDS1 in member CTTTPARM is set to Y, the vaulting data set is always the first data set on the volume. If VLTBYDS1 is set to N, the vaulting data set is the first data set on the volume that has vaulting information. For more information about installation parameter VLTBYDS1, see the CONTROL-M/Tape chapter of the <i>INCONTROL for z/OS Installation Guide</i>.</p> <p>Syntax: LAST=<i>number_days</i> where <i>number_days</i> is the Number of days. A maximum of 4 digits can be specified.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional UNTIL field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

Table 168 Types of DO VAULT Subparameter UNTIL (part 3 of 3)

Type	Description
MVS CATALOG (M or CA)	<p>Vault retention is based on the existence of the volume in the operating system catalog. If the catalog still controls the volume, the volume is retained in the vault. Otherwise, the volume is no longer retained in the vault.</p> <p>No subparameter fields are specified with this UNTIL type.</p> <p>And/Or – When A (And) or O (Or) is specified, an additional UNTIL field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>
PERMANENT (P)	<p>Volume is retained indefinitely in the vault. This UNTIL type allows manual control of volume movement.</p> <p>No subparameters are specified with this UNTIL type.</p> <p>No other UNTIL types can be combined with this UNTIL type (meaning, using And/Or).</p>
VOL EXPIRE (VO)	<p>Vault retention is based on the expiration date of the volume. As soon as the expiration date of the volume passes, the volume is removed from the vault and its status is changed to Pend-Scratch.</p> <p>No subparameters are specified with this UNTIL type.</p> <p>No other UNTIL types can be combined with this UNTIL type (meaning, using And/Or).</p>
VAULT DAYS (VA)	<p>Vault retention is based on the number of days since the volume was sent to the vault.</p> <p>Syntax: VAULT DAYS=<i>number_days</i> where <i>number_days</i> is the Number of days. A maximum of 4 digits can be specified.</p> <p>And/Or–When A (And) or O (Or) is specified, an additional UNTIL field is opened on the screen. “And/Or Subparameter Logic” is described in this chapter.</p>

General Information

The DO VAULT statement specifies the location to be used for off-site storage of volumes and how long the volumes are stored at that location.

The combination of DO VAULT subparameters specified in a rule definition establishes the vault pattern for the specified volumes.

Multiple DO VAULT statements can be specified in a rule, but the “DO” keyword only appears in the first DO VAULT statement.

All vaulting is either by box or not by box. Therefore, if multiple VAULT statements are defined, the value specified in the BY BOX subparameters (of the first VAULT statement) applies to all VAULT statements.

Specification of the expression DO VAULT=MAINLIB indicates the return of a vaulted volume to the active library. When a volume is returned to the active library, the expiration date of the volume is checked. If the volume has expired, its status is changed to Pend-Scratch.

All vaults are defined in a member whose default name is \$\$VAULT in the CONTROL-M/Tape PARM library. A vault must be defined before its name can be specified in a DO VAULT statement.

Vaulting is not performed when a job abends.

Vaulting for multi-volume chains is also supported. For additional information, see [“Vault Management” on page 443](#).

For general information on vaults, see [“Vault Management” on page 38](#).

CYCLES Retention Type

UNTIL CYCLES indicates that CONTROL-M/Tape is to retain a specified number of versions of a data set. Depending on conventions in use at the site, different versions of the same data set can be distinguished by a unique identifier (for example, time stamp) appended to a prefix in the data set name. In such cases, different versions of the same data set have the same prefix, but their full names are different.

Therefore, when counting data set cycles, it is necessary to instruct CONTROL-M/Tape whether to identify data sets by their entire name, or by the prefix specified in the ON DATASET statement. This is done using subparameter PREFIX. Specifying Y (Yes) in the PREFIX subparameter instructs CONTROL-M/Tape to take a unified count of all data set versions with the same prefix. Specifying N (No) instructs CONTROL-M/Tape to identify data set versions by their full name.

Within the same rule definition, the value for subparameter PREFIX in DO VAULT statements specifying UNTIL CYCLES is independent of, and can be different from, the value specified for subparameter PREFIX in DO RETENTION and DO ABENDRET statements that specify the CYCLES retention type.

However, the PREFIX must be the same for each vault specified within the same DO VAULT statement.

Examples

Example 1

```
ON DATASET=BKP*
DO VAULT=V1
    UNTIL    CYCLES 0010    PREFIX Y
```

There are five versions of file BKP001.

There are three versions of file BKPACCT.

There are two versions of file BKP.

If another version of any of these files is created, they will have exceeded their vault retention period (ten cycles) and the oldest volume is moved to the next vault.

Example 2

```
ON DATASET=BKP*
DO VAULT=V1
    UNTIL    CYCLES 0010    PREFIX N
```

- There are five versions of file BKP001.
- There are three versions of file BKPACCT.
- There are two versions of file BKP.

If another version of any of these files is created, their individual counts will not have exceeded their vault retention period (ten cycles). Therefore, no volumes are moved.

Example 3

Set vault patterns for accounting department volumes. The volumes should remain in the active library (MAINLIB) until 01/01/00, after that the volumes are transferred to the accounting vault permanently.

Figure 181 DO VAULT Parameter – Example 3

RULE: VAULTVOL LIB CTT.PROD.RULES				TABLE: ACC0003	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	VAULTVOL	GROUP ACCOUNTING	MODE	PROD (Prod/Test)	
OWNER	M43A	SEQUENCE PRIORITY 01	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	THIS RULE VAULTS VOLUMES ACC001-ACC200 AT YEAR-END. THESE				
DESCRIPTION	VOLUMES ARE RETAINED PERMANENTLY IN THE VAULT.				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	=	ACC*		And/Or/Not A	
ON VOLSER	=	ACC001 TO ACC200		And/Or/Not	
=====					
DO VAULT	=	MAINLIB	BY BOX	(Y/N)	
UNTIL	=	DATE	0101 YEAR 2000	And/Or	
VAULT	=	VLT-ACC			
UNTIL		PERMANENT		And/Or	
VAULT	=				
DO					
=====					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT				15.49.41	

DOCLIB: General Parameter

Name of the library in which the rule documentation member resides.

Figure 182 DOCLIB Parameter Format

RULE NAME	<input type="text"/>	GROUP	<input type="text"/>	MODE	<input type="text"/> (Prod/Test)
OWNER	<input type="text"/>	SEQUENCE PRIORITY	<input type="text"/>	CONTINUE SEARCH	<input type="text"/> (Y/N)
DESCRIPTION	<input type="text"/>				
DOCMEM	<input type="text"/>	DOCLIB	<input type="text"/>		

Optional. The DOCLIB parameter specifies a valid data set name of 1 through 44 characters.

General Information

The library can be any standard partitioned data set. The record length must be 80.

The default is defined in the profile library, or it is blank.

Any number of documentation libraries can be used at your site. However, only one documentation library can be specified in each rule definition.



NOTE

Users with DOCU/TEXT installed at their sites can specify a DOCU/TEXT library and member with up to 132 characters per line. However, if more than the first 71 characters in a line are used, the line is truncated and Browse mode is forced. Browse mode is also forced if a line contains an unprintable character. Changes to the documentation are not permitted in Browse mode.

Example

Rule documentation is written to member CTTDOCS in library CTT.PROD.DOC.

Figure 183 DOCLIB Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 03	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES					
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= BKP*				And/Or/Not A
ON PGM	= BKP*				And/Or/Not A
ON USERID	= ADMIN				And/Or/Not
=====					
DO RETENTION	= DAYS	0365			And/Or
DO ABENDRET	= CYCLES	0001	PREFIX Y	(Y/N)	And/Or
DO					
=====					
=====					
DAYS	ALL				DCAL
				AND/OR	
WDAYS				WCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

DOCMEM: General Parameter

Name of the member in which rule documentation resides.

Figure 184 DOCMEM Parameter Format

RULE NAME		GROUP		MODE		(Prod/Test)
OWNER		SEQUENCE PRIORITY		CONTINUE SEARCH		(Y/N)
DESCRIPTION						
DOCMEM		DOCLIB				

Optional. Parameter DOCMEM specifies a valid member name of 1 through 8 characters.

General Information

This member contains the detailed documentation written in the DOC lines of the Rule Definition screen.

As a default, the DOCMEM name is set to the same value as specified for RULE NAME.

NOTE



Users with DOCU/TEXT installed at their sites can specify a DOCU/TEXT library and member with up to 132 characters per line. However, if more than the first 71 characters in a line are used, the line is truncated and Browse mode is forced. Browse mode is also forced if a line contains an unprintable character. Changes to the documentation are not permitted in Browse mode.

Example

Rule documentation is written to member CTTDOCS in the CTT.PROD.DOC library.

Figure 185 DOCMEM Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)		
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y (Y/N)		
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not	A
ON PGM	= BKP*			And/Or/Not	A
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0365		And/Or	
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or	
DO					
=====					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

GROUP: General Parameter

Descriptive name for a group of rules that includes this rule.

Figure 186 GROUP Parameter Format

RULE NAME		GROUP		MODE		(Prod/Test)
OWNER		SEQUENCE PRIORITY		CONTINUE SEARCH		(Y/N)
DESCRIPTION						
DOCMEM		DOCLIB				

Optional. Parameter GROUP specifies a group name of 1 through 20 characters. No blanks (except trailing blanks) are allowed.

General Information

This parameter facilitates rule handling.

The group name appears in all important IOA Log messages relating to the group's rules.

Example

Set the group of this rule to PRODUCTION.

Figure 187 GROUP Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE	PROD (Prod/Test)	
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0365		And/Or	
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or	
DO					
=====					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

MODE: General Parameter

Specifies the CONTROL-M/Tape operation mode for this rule.

Figure 188 MODE Parameter Format

```

RULE NAME  [ ] GROUP  [ ] MODE  [ ] (Prod/Test)
OWNER      [ ] SEQUENCE PRIORITY [ ] CONTINUE SEARCH [ ] (Y/N)
DESCRIPTION [ ]
DOCMEM     [ ] DOCLIB [ ]
  
```

Parameter MODE determines whether CONTROL-M/Tape should intervene in media management processes.

Table 169 MODE Subparameters

Subparameter	Description
P (PROD)	Standard production mode. Default.
T (TEST)	Test mode. Information is recorded in the Media Database but CONTROL-M/Tape does not intervene in any way (for example, prompts are not issued, unexpired data sets are not protected, and jobs are not abended by CONTROL-M/Tape).

General Information

Test mode provides an opportunity to test the effects of a rule definition without performing actual processes.

Global Test mode (set using parameter MODE in member CTTARM) overrides rule production mode.

Examples

Example 1

Set the mode of backup jobs to PROD.

Figure 189 MODE Parameter Example 1

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002
COMMAND ===>				SCROLL===> CRSR

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)	
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y (Y/N)	
DESCRIPTION SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION				
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS		
=====				
DOC				
=====				
ON DATASET	= BKP*		And/Or/Not A	
ON PGM	= BKP*		And/Or/Not	
=====				
DO RETENTION	= DAYS	0365	And/Or	
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or
DO				
=====				
DAYS	ALL		DCAL	
			AND/OR	
WDAYS			WCAL	
MONTHS 1- Y 2- Y 3- Y 4- Y 5- Y 6- Y 7- Y 8- Y 9- Y 10- Y 11- Y 12- Y				
FILL IN RULE DEFINITION. CMDs: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT 15.49.41				

MONTHS: Basic Scheduling Parameter

Specifies months of the year when the rule is scheduled.

Figure 191 MONTHS Parameter Format

DAYS

DCAL

AND/OR

WDAYS

WCAL

MONTHS

1-

2-

3-

4-

5-

6-

7-

8-

9-

10-

11-

12-

Optional. Each month in the year is identified separately (represented by numbers 1 through 12), and a value can be specified for each month. Valid values:

Table 170 MONTHS Parameter Values

Value	Description
Y (Yes)	Schedule the rule in that month. Default.
N (No)	Do not schedule the rule in that month.

General Information

The rule is scheduled for execution only during the months when a value of Y (Yes) is specified.

Parameter MONTHS cannot be used with parameter DATES.

When the MONTHS parameter is used, at least one of the following must be specified: DAYS, DCAL, WDAYs or WCAL.

Parameter MONTHS is ignored when periodic values are specified in the DAYS or WDAYs parameter.

Examples

Schedule a rule only in March and September:

MONTHS	1-	N	2-	N	3-	Y	4-	N	5-	N	6-	N	7-	N	8-	N	9-	Y	10-	N	11-	N	12-	N
--------	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	-----	---	-----	---	-----	---

Schedule a rule in all months of the year:

MONTHS	1-	Y	2-	Y	3-	Y	4-	Y	5-	Y	6-	Y	7-	Y	8-	Y	9-	Y	10-	Y	11-	Y	12-	Y
--------	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	----	---	-----	---	-----	---	-----	---

ON Statement: Selection Parameter

Specification of selection criteria. The access of media that meet the selection criteria triggers the rule. CONTROL-M/Tape can then perform DO actions on the media.

Figure 192 ON Parameter Format

ON VOLSER	=		TO		And/Or/Not	O
ON MEDIA	=				And/Or/Not	O
ON DATASET	=				And/Or/Not	A
ON ACCOUNT	=				And/Or/Not	O
ON PGM	=				And/Or/Not	O
ON USERID	=				And/Or/Not	A
ON JOBNAME	=				And/Or/Not	O
ON MGMTCLAS	=				And/Or/Not	O
ON UCH	=		TO		And/Or/Not	

Type a valid option (abbreviated V, D, J, A, US, P, ME, MG, or UC) in the ON field and press **Enter**. Specify subparameters for each option as prompted.

Table 171 ON Subparameters (part 1 of 2)

Subparameter	Description
VOLSER (V)	Syntax: VOLSER (V) <i>volser_start</i> TO <i>volser_end</i> where: <ul style="list-style-type: none">■ <i>volser_start</i> – Volume serial number (or starting volume serial number in a range) that contains the data set (6 characters). Character masking is supported if no range is specified.■ <i>volser_end</i> – Ending volume serial number if a range is specified. Character masking is not supported in this field.
DATASET (D)	Name (or mask) of the data set (1 to 33 characters). Every rule definition must contain one ON DATASET statement. If no ON DATASET statement is specified, CONTROL-M/Tape automatically adds the expression ON DATASET=* to the rule definition. Note: In rules in which Generation Data Group (GDG) data sets are to be stacked (using the expression DO STACK=Y) only the base name of the data set is specified in the ON DATASET statement (without the last period). For example, if the data set name is A.B.C.G0001V00, the ON statement is as follows: ON DATASET=A.B.C
JOBNAME (J)	Name (or mask) of the job that created the data set (1 through 8 characters).

Table 171 ON Subparameters (part 2 of 2)

Subparameter	Description
ACCOUNT (A)	JCL accounting information (or mask) of the job that created the data set.
USERID (US)	User ID (or mask) of the user assigned to the job that created the data set (1 through 8 characters). The default is site dependent.
PGM (P)	Name (or mask) of the programs that created the data set (1 through 8 characters).
MEDIA (ME)	Media type of the volume (for example, cartridge, tape). (1 through 8 characters.) The values for this field must match those specified in a predefined table specified by the user in member CTTARM. For additional information, see the <i>INCONTROL for z/OS Installation Guide</i> . Character masking is not supported.
MGMTCLAS (MG)	DFSMS Management Class (1 through 8 characters). Relevant only if the CONTROL-M/Tape to DFSMS interface is active. For additional information, see “CONTROL-M/Tape to DFSMS Interface” on page 447 .
UCB (UC)	Unit Control Block (UCB) or range of UCBs of the device on that the data set is created. Mask characters (* and ?) can be specified for this field. Notes: A second value (in the TO field) should only be specified if a range is indicated. Mask characters cannot be specified as part of a range in an ON UCB statement.

Examples

Specifying a value:

```
ON UCB=01A2 TO
```

Specifying a range:

```
ON UCB=0100 TO 0200
```

Specifying a mask:

```
ON UCB=01?? TO
```

General Information

The ON statement specifies criteria for the triggering of the rule. When a data set or volume that meets these criteria is accessed, the rule is triggered, and actions (DO statements) specified in the rule, are performed.

ON MEDIA and ON VOLSER statements cannot be specified in either of the following cases:

- AT MOUNT is specified in a DO CONDITION, DO FORCEJOB, DO RESOURCE, DO SET or DO SHOUT statement in the rule.
- The volume specified in the ON statement was not defined in the Media Database when the current job started.

Within an ON block one, and only one, ON DATASET statement must be specified. Because no other ON DATASET statements are specified, CONTROL-M/Tape automatically adds the ON DATASET=* expression to any ON block. All other media options (for example, VOLSER, MEDIA, and JOBNAME) can be specified an unlimited number of times.

Character masking is supported in all ON statements except ON MEDIA. For more information about masking, see “Character Masking” in Chapter 2.

And/Or/Not Subparameter

This subparameter permits specification of multiple ON statements within one ON block (for specifying a combination of media selection criteria).

When specified, another ON line is opened for inputting selection criteria. The newly-opened line must be filled.

The ON block is considered satisfied, and the rule is activated, when a complete set of ON statements is satisfied according to Boolean logic:

Table 172 And/Or/Not subparameter values

Value	Description
A (And)	Indicates AND logic between the two statements. Both ON statements must be satisfied for the same volume or data set.
O (Or)	Indicates OR logic between the two statements. At least one of the ON statements must be satisfied for the same volume or data set.
N (Not)	Indicates NOT logic. The next ON statement must not be satisfied.

Subparameter And/Or/Not uses standard Boolean relations. AND and NOT are applied before OR. NOT means AND NOT as represented below:

A AND B OR C NOT D

is interpreted as

[(A AND B) OR (C AND NOT D)]

Examples

Example 1

Stacking is enabled for all data sets on all volumes (indicated by specifying mask character * in the ON DATASET statement).

Figure 193 ON Parameter – Example 1

RULE: STARTSTK LIB CTT.PROD.RULES										TABLE: PRD0002															
COMMAND ==>										SCROLL==> CRSR															

RULE NAME		STARTSTK		GROUP PRODUCTION						MODE PROD (Prod/Test)															
OWNER		M43A		SEQUENCE PRIORITY 01 CONTINUE SEARCH Y						(Y/N)															
DESCRIPTION		THIS RULE ENABLES STACKING FOR ALL DATA SETS.																							
DESCRIPTION																									
DOCMEM		STARTSTK		DOCLIB CTT.PROD.DOCS																					
=====																									
DOC																									
=====																									
ON DATASET		= *														And/Or/Not									
=====																									
DO STACK		= Y		(Y/N)																					
DO																									
=====																									
=====																									
DAYS		ALL														DCAL									
																AND/OR									
WDAYS																WCAL									
MONTHS		1-	Y	2-	Y	3-	Y	4-	Y	5-	Y	6-	Y	7-	Y	8-	Y	9-	Y	10-	Y	11-	Y	12-	Y
DATES																									
CONFCAL		SHIFT																							
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT																15.49.41									

Example 2

This rule, that forces a CONTROL-M job, is triggered when any data set on a 3400 volume is accessed.

Figure 194 ON Parameter – Example 2

RULE: TAPEUTIL LIB CTT.PROD.RULES				TABLE: PRD0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	TAPEUTIL	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 01	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION THIS RULE FORCES A CONTROL-M JOB WHICH REPORTS ON 3400 TAPE					
DESCRIPTION UTILIZATION.					
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= *				And/Or/Not A
ON MEDIA	= 3400				And/Or/Not
=====					
DO FORCEJOB	= TABLE	CTMREPS	JOB REP3931	DATE	ODAT
	LIBRARY	CTM.PROD.SCHEDULE			
	AT	CLOSE			
DO CONDITION	= CTM-JOB-REQUESTED	ODAT	+		
	AT	CLOSE			
DO SHOUT	= TO TSO-M38	URGENCY	R		
MESSAGE	REMINDER: INSERT REPORT INTO 3400 TAPE UTILIZATION LOG.				
	AT	CLOSE			
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					
					15.49.41

Example 3

This rule, which vaults accounting data sets and volumes, is triggered when any data set is accessed on a volume whose volume serial number is between ACC001 and ACC200.

Figure 195 ON Parameter – Example 3

RULE: VAULTVOL LIB CTT.PROD.RULES				TABLE: ACC0003	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	VAULTVOL	GROUP	ACCOUNTING	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 01	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION THIS RULE VAULTS VOLUMES ACC001-ACC200 AT YEAR-END. THESE					
DESCRIPTION VOLUMES ARE RETAINED PERMANENTLY IN THE VAULT.					
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= ACC*				And/Or/Not A
ON VOLSER	= ACC001 TO ACC200				And/Or/Not
=====					
DO VAULT	= MAINLIB		BY BOX N (Y/N)		
UNTIL	= DATE		0101 YEAR 2000		And/Or
VAULT	= VLT-ACC				
UNTIL	PERMANENT		And/Or		
VAULT	=				
DO					
=====					
=====					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

Example 4

Using subparameter And/Or/Not, CONTROL-M/Tape selects this rule only if all three criteria are met: the data sets accessed are prefixed with BKP, the volumes were accessed by jobs prefixed with BKP and the owner is ADMIN.

Figure 196 ON Parameter – Example 4

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)		
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y (Y/N)		
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0365		And/Or	
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or	
DO					
=====					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

OWNER: General Parameter

User ID of the user who created the rule. This parameter is used by the CONTROL-M/Tape security mechanism and for documentation.

Figure 197 OWNER Parameter Format

The screenshot shows a form with the following fields and labels:

- RULE NAME**: A text input field.
- GROUP**: A text input field.
- MODE**: A text input field with a dropdown arrow, followed by the text "(Prod/Test)".
- OWNER**: A text input field.
- SEQUENCE PRIORITY**: A text input field.
- CONTINUE SEARCH**: A text input field with a dropdown arrow, followed by the text "(Y/N)".
- DESCRIPTION**: A large text input field.
- DOCMEM**: A text input field.
- DOCLIB**: A text input field.

Mandatory. The OWNER parameter must be 1 through 8 characters.

General Information

Upon initial entry into the Rule Definition screen, the OWNER field is set to the user's logon ID.

Example

Assign the rule to the user having user ID M43A.

Figure 198 OWNER Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP	PRODUCTION	MODE	PROD (Prod/Test)
OWNER	M43A	SEQUENCE	PRIORITY 03	CONTINUE	SEARCH Y (Y/N)
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DOCMEM	CTTDOCS	DOCLIB	CTT.PROD.DOCS		
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not	A
ON PGM	= BKP*			And/Or/Not	A
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS		0365	And/Or	
DO ABENDRET	= CYCLES		0001	PREFIX Y (Y/N)	And/Or
DO					
=====					
=====					
DAYS	ALL			DCAL	
				AND/OR	
WDAYS				WCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

RULE NAME: General Parameter

Name of the rule.

Figure 199 RULE NAME Parameter Format

RULE NAME

GROUP

MODE

(Prod/Test)

OWNER

SEQUENCE PRIORITY

CONTINUE SEARCH

(Y/N)

DESCRIPTION

DOCMEM

DOCLIB

Mandatory. Parameter RULE NAME specifies a valid rule name of 1 through 8 characters.

General Information

Parameter RULE NAME contains the name of the rule.

If this field is blank, specify the name of the new rule.

To modify the name of a rule, simply change the name as desired.



NOTE

The rule whose RULE NAME is \$DEFAULT is a special rule used to set default retention settings that are compatible with CA-TLMS. For additional information, see the *INCONTROL for z/OS Installation Guide*.

Example

Set the name of the following newly created rule to BKPSAVE:

Figure 200 RULE NAME Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)		
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*			And/Or/Not A	
ON PGM	= BKP*			And/Or/Not A	
ON USERID	= ADMIN			And/Or/Not	
=====					
DO RETENTION	= DAYS	0365		And/Or	
DO ABENDRET	= CYCLES	0001	PREFIX Y (Y/N)	And/Or	
DO					
DATES					
CONFCAL	SHIFT				
=====					
=====					
DAYS	ALL			DCAL	
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

SEQUENCE PRIORITY: General Parameter

Internal CONTROL-M/Tape rule scanning priority.

Figure 201 SEQUENCE PRIORITY Parameter Format

RULE NAME		GROUP		MODE		(Prod/Test)
OWNER		SEQUENCE PRIORITY		CONTINUE SEARCH		(Y/N)
DESCRIPTION						
DOCMEM		DOCLIB				

Parameter SEQUENCE PRIORITY must contain two alphanumeric characters or be blank.

Priority is determined in ascending order where blank<A<Z<0<9. Therefore, increasing priority order is: blank-AA-AZ-A0-A9-0A-0Z-00-09-9A-9Z-90-99.

The default SEQUENCE PRIORITY is blank (the lowest priority).

General Information

Sequence priority controls the order in which rules are scanned. When CONTROL-M/Tape searches for a rule, the first rule that matches the selection criteria is activated. Therefore, the sort order of the rules in the currently active rule table is extremely important.

A Rule list is either sorted or unsorted, based on the value specified in the AUTOMATIC RULE SORTING field on the Rule Definition entry panel.

- If AUTOMATIC RULE SORTING is set to N (No), rules are listed in the order in which they were defined, and SEQUENCE PRIORITY has no effect on the order of the rules.
- If AUTOMATIC RULE SORTING is set to Y (Yes), rules are listed in Best Match order.

This order is described in “[Best Match Order](#)” on [page 404](#). According to this order:

- The rule with the highest SEQUENCE PRIORITY is placed at the top of the list.

- The rule with the lowest SEQUENCE PRIORITY is placed at the bottom of the list.
- Rules with the same SEQUENCE PRIORITY are sorted according to their selection criteria.

Example

Set the sequence priority of the rule to priority 03.

Figure 202 SEQUENCE PRIORITY Parameter Example

RULE: BKPSAVE LIB CTT.PROD.RULES				TABLE: BKP0002	
COMMAND ==>				SCROLL==> CRSR	

RULE NAME	BKPSAVE	GROUP PRODUCTION	MODE PROD (Prod/Test)		
OWNER	M43A	SEQUENCE PRIORITY 03	CONTINUE SEARCH Y	(Y/N)	
DESCRIPTION	SETS RETENTION AND ABEND-RETENTION PERIODS FOR BACKUP FILES				
DESCRIPTION					
DOCMEM	CTTDOCS	DOCLIB CTT.PROD.DOCS			
=====					
DOC					
=====					
ON DATASET	= BKP*				And/Or/Not A
ON PGM	= BKP*				And/Or/Not A
ON USERID	= ADMIN				And/Or/Not
=====					
DO RETENTION	= DAYS	0365			And/Or
DO ABENDRET	= CYCLES	0001	PREFIX Y	(Y/N)	And/Or
DO					
DATES					
CONFCAL	SHIFT				
=====					
=====					
DAYS	ALL				DCAL
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					15.49.41

WDAYS: Basic Scheduling Parameter

Specifies days of the week on which the rule is scheduled.

See also DAYS and CONFCAL.

Figure 203 WDAYs Parameter Format

DAYS

DCAL

AND/OR

WDAYS

WCAL

MONTHS

1-

2-

3-

4-

5-

6-

7-

8-

9-

10-

11-

12-

Optional. The WDAYs parameter specifies days of the week on which rules are scheduled, provided other scheduling criteria are met.

Values for WDAYs can be specified alone, or they can be specified together with a calendar specified in the WCAL subparameter. WDAYs/WCAL can also be specified together with DAYS/DCAL (described under DAYS in this chapter of the guide).

The WDAYs subparameters are described below:

Table 173 WDAYs Subparameters (part 1 of 2)

Subparameter	Description
WDAYS	<div>Days of each week in the month on which to schedule a rule. The months in which to schedule rules are specified in the MONTHS parameter, described in this chapter.</div> <div>Various formats, described later, can be used to specify WDAYs. For example, 3 means the 3rd day of the week, L2 means the day before the last day of the week.</div> <div>Notes:<ul style="list-style-type: none">■ During installation, either Sunday or Monday is selected as the “first” day of the week. Your INCONTROL administrator can tell you whether the week begins on Sunday or Monday at your site.■ The first six days of the week are coded 1 through 6. The last day of the week is coded 0 (zero). All examples in this chapter assume Monday is the first day of the week. In these examples, Monday=1, Tuesday=2, . . . , Saturday=6 and Sunday=0.■ When defining a new RULE the value of WDAYs is automatically set to ALL.</div>

Table 173 WDAYs Subparameters (part 2 of 2)

Subparameter	Description
WCAL	<p>Name of a calendar containing a predefined set of dates (referred to as working days) on which a rule is scheduled. A specified name must be a valid member name of 1 through 8 characters. For more information on how to define, use and modify calendars, see “IOA Calendar Facility” on page 236.</p> <p>Note: A calendar specified in WCAL does not have to exist when defining the rule parameters. Its existence is checked by the New Day procedure, so it must exist when the rule is scheduled.</p>

Assuming all other basic scheduling criteria are met:

- When WDAYs are specified without WCAL, the rule is scheduled on the specified days of the week.
- When WCAL is specified without WDAYs, the rule is scheduled on the working days marked in the WCAL calendar.
- When WDAYs and WCAL are both specified, scheduling depends on the how the working days defined in the calendar, and the values and format of the WDAYs parameter combine (described below).
- When both DAYS and WDAYs criteria are specified, scheduling depends on the connecting AND/OR value specified. (For more information, see subparameter AND/OR in the DAYS parameter.)

Valid Formats for WDAYs

Valid formats for the WDAYs parameter, and how they relate to WCAL, are described below.

Non-periodic scheduling

The following rules govern the use of non-periodic scheduling formats:

- n is an integer from 0 to 6, where 1 is the first day of the week (Sunday or Monday, depending on the standards at your site) and 0 is the last day of the week (either Saturday or Sunday).
- Multiple values can be specified (separated by commas) in any order.
- If a calendar name is specified for WCAL, it should not designate a periodic calendar.

Table 174 Non-Periodic Scheduling Formats

Format	Description
ALL	<p>All days in the week. If ALL is specified, other WDAYs values cannot be specified with it.</p> <p>If a WCAL calendar is not defined, schedule the rule on all days in the week.</p> <p>If a WCAL calendar is defined, schedule the rule only on the working days indicated in the calendar.</p>
n,...	<p>Specific days of the week.</p> <p>If a WCAL calendar is not defined, schedule the rule on the specified days.</p> <p>If a WCAL calendar is defined, schedule the rule only when a day is defined as a working day in both the WDAYs and the WCAL parameters.</p>
+n,...	Days of the week in addition to the working days specified in the WCAL calendar. WCAL is mandatory.
-n,...	Order the rule on all days except the nth day from the beginning of the week. WCAL is mandatory.
>n,...	Order the rule on the indicated day if it is a working day in the WCAL calendar; otherwise, order the rule on the next working day (within the next seven days) that is not negated by a -n value in the parameter. If none of the next seven days is a working day, the rule is not ordered. This format is frequently used for holiday handling. WCAL is mandatory.
<n,...	Order the rule on the indicated day if it is a working day in the WCAL calendar; otherwise, order the rule on the last previous working day (within the preceding seven days) that is not negated by a -n value in the parameter. If none of the preceding seven days was a working day, the rule is not ordered. This format is frequently used for holiday handling. WCAL is mandatory.
Dn,...	Order the rule on the nth working day from the beginning of the week. WCAL is mandatory.
-Dn,...	Order the rule on all working days except the nth working day from the beginning of the week. WCAL is mandatory.
Ln,...	Order the rule on the nth working day from the end of the week. WCAL is mandatory.
-Ln,...	Order the rule on all working days except the nth working day from the end of the week. WCAL is mandatory.
DnWm,...	<p>(Where $m = 1-6$). If WCAL is defined, order the rule on the nth day of the mth week of the month. If WCAL is not defined, order the rule on the mth appearance of the nth day of the week during the month. WCAL is optional.</p> <p>Note: When specifying DnWm with a calendar in the WCAL field, do not code n as 0. This may produce unpredictable results.</p>

Periodic scheduling

The following rules govern the use of periodic scheduling formats:

- n is any integer from 0 to 6, and i is any valid period identifier (or * for all periods).
- WDAYs period identifiers are counted on a week by week basis. Calculations do not cross week boundaries (unlike DAYs periodic identifiers that do cross month boundaries).
- The name of a periodic calendar must be specified in WCAL.
- A maximum of eight periodic values can be designated in any desired order.

Table 175 Periodic Scheduling Formats

Format	Description
DnPi,...	Order the rule on the n th day of period i in each week, from the beginning of the week.
-DnPi,...	Order the rule on all days except the n th day of period i in each week, from the beginning of the week.
LnPi,...	Order the rule on the n th day of period i in each week, from the last day of the week.
-LnPi,...	Order the job on all days in period i except the n th day of period i in each week, from the last day of the week.

General Information

Negative values take precedence over positive values when determining if a rule is scheduled on a certain date. If a negative value (meaning, format $-n$, $-Dn$, $-Ln$, $-DnPi$, or $-LnPi$) in either the DAYs or WDAYs field prevents a rule from being scheduled on a date, the rule is not scheduled on that date even if a positive value (for example, Ln) would otherwise result in the rule being scheduled on that date.

If periodic and non-periodic values are mixed when specifying parameter WDAYs, processing depends on the type of calendar specified in parameter WCAL.

- If a non-periodic calendar is specified in the WCAL parameter, only non-periodic values in the WDAYs parameter are processed; periodic values are ignored. In this case, negative periodic values (meaning, $-DnPi$, $-LnPi$) are also ignored and do not supersede other values.
- If a periodic calendar is specified in the WCAL parameter, all periodic values and the negative non-periodic value $-n$ in the WDAYs parameter are processed; all nonnegative non-periodic values are ignored.

Parameter MONTHS is ignored when periodic values are specified in parameter WDAYS.

When L_n and/or D_n values are specified in a week that overlaps two months, it is the MONTHS value of the earlier month that determines whether D_n or L_n values are applied in the week.

- If the first day of the week falls in a month with a MONTHS value of Y, all Dn and Ln values in that week are applied, even those falling in the next or previous month when that month has a MONTHS value of N.
- If the first day of the week falls in a month with a MONTHS value of N, no Dn or Ln values in that week are applied (not even if those falling in the next or previous month when that month has a MONTHS value of Y).

Examples

The examples in this chapter are based on the following assumptions:

- The current month is December 2001.
- Working days are defined in calendar WORKDAYS that contains the following working days (indicated by Y) for December 2001:

S										S										S										S										S									
1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1																			
		Y	Y	Y	Y	Y						Y	Y	Y	Y	Y							Y			Y	Y	Y			Y																		

- Periodic calendar PERIDAYS contains the following periodic definition for December 2001. These examples assume that all other days of this calendar are blank.

S									S									S									S									S								
1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1	2	3	4	5	6	7	8	9	+	1														
		B	C	A	A	B						B	C	A	A	B							B	C	A	A	B								B									

- Start of the week is defined as Monday. Weeks start on the following dates in December 2001: 3rd, 10th, 17th, 24th, and 31st.

At the end of each example, asterisks on a December 2001 calendar indicate the days on which the rule is scheduled.

Example 1

Schedule the rule on every Sunday and Monday.

WDAYS	- 0,1
-------	-------

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 204 WDAYs Parameter – Example 1

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
	*	*						*	*						*	*						*	*						*	*

Example 2

Schedule the rule on all working days and on all Saturdays.

WDAYS	- +6
WCAL	- WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 205 WDAYs Parameter – Example 2

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
*		*	*	*	*	*	*		*	*	*	*	*	*		*	*	*	*	*	*		*		*	*	*	*		*

Example 3

Schedule the rule on Sunday, if it is a working day. If Sunday is not a working day, schedule the rule on the first preceding working day that is not a Friday.

WDAYS	- -5,<0
WCAL	- WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 206 WDAY5 Parameter – Example 3

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
					*							*						*							*					

Example 4

Schedule the rule on the 1st Monday of the 1st week.

WDAYS	-	D1W1
-------	---	------

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 207 WDAY5 Parameter – Example 4

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*																												

Example 5

Schedule the rule on all working days except Mondays and Fridays.

WDAYS	-	-D1,-L1
WCAL	-	WORKDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 208 WDAY5 Parameter – Example 5

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
			*	*	*					*	*	*				*	*	*						*	*					

Example 6

Each week, schedule the rule on the 1st day of period A, and on all days, except the second day of period B, in that week.

WDAYS	-	D1PA,-D2PB
WCAL	-	PERIDAYS

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 209 WDAYs Parameter – Example 6

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*		*					*		*					*		*					*		*					*

Example 7

Schedule the rule on each Monday, and on the 1st day of the month.

DAYS	- 1
AND/OR	- OR
WDAYS	- 1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 210 WDAYs Parameter – Example 7

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
*		*							*							*							*							*

Example 8

Schedule the rule on the 3rd day of the month provided it is a Monday.

DAYS	- 3
AND/OR	- AND
WDAYS	- 1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 211 WDAYs Parameter – Example 8

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*																												

Example 9

Schedule the rule on the last Monday of the month.

DAYS	-	L1,L2,L3,L4,L5,L6,L7
AND/OR	-	AND
WDAYS	-	1

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 212 WDAYs Parameter – Example 9

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
																														*

Example 10

Schedule the rule on the 1st, 7th and 15th day of the month if they are both Saturdays and working days. If the day of the month (1st, 7th, 15th) is not a Saturday, do not schedule the rule. If the day of the month is a Saturday, but it is not a working day, schedule the rule on the next working day.

DAYS	-	1,7,15
AND/OR	-	AND
WDAYS	-	6
CONF CAL	-	WORKDAYS
SHIFT	-	>

The rule is scheduled on the days of the month indicated by an asterisk:

Figure 213 WDAYs Parameter – Example 10

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO	TU	WE	TH	FR	SA	SU	MO
		*														*														

Organization and Administration

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Real-time Environment



NOTE

In the following discussion, the numbers in parentheses refer to CONTROL-M/Tape components in [Figure 214 on page 398](#).

The CONTROL-M/Tape Real-Time environment (1) is activated when CONTROL-M/Tape is started. The Real-Time environment is responsible for maintaining the integrity of data, and for recording rule specifications and other media management information in the Media Database.

Once the Real-Time environment is established, CONTROL-M/Tape takes control of volumes processed in the system. CONTROL-M/Tape performs extensive validity checks to ensure the data integrity of the media library at the site. In addition, stacking can be performed for nonspecific mount requests.

As a data set moves through the system, CONTROL-M/Tape gathers relevant information, searches rules to determine the required actions, such as retention and vaulting information, and updates the Media Database.

The CONTROL-M/Tape Real-Time environment is also responsible for the execution of rules containing user-defined instructions. CONTROL-M/Tape rules are stored in Rule Definition libraries. Similarly, vault and pool specifications are stored in Vault and Pool Definition libraries. These libraries are standard partitioned data sets and users can define their own definition libraries (2).

When access to removable media is attempted, the CONTROL-M/Tape Real-Time environment scans all rules and performs the appropriate rules.

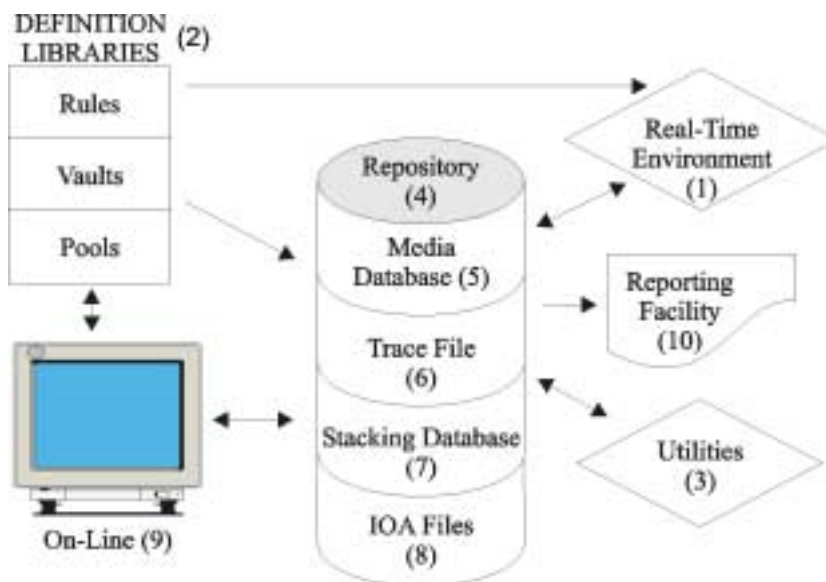
CONTROL-M/Tape utilities (3) facilitate production processing by handling maintenance, backup and archiving of the repository, and many other necessary functions.

The repository (4) is accessed by all CONTROL-M/Tape components. Every action performed by CONTROL-M/Tape is recorded in the repository. The repository contains the Media Database (5), Trace file (6), Stacking Database (called the Stacking Statistics file prior to version 5.1.4) (7) and IOA files (8). The repository can be scanned and updated using the IOA Online facility (9).

The Reporting facility (10) accesses the repository to produce various reports that are useful in an active data center.

CONTROL-M/Tape Main Components

Figure 214 CONTROL-M/Tape Main Components



Real-time Operations

Many CONTROL-M/Tape features operate “behind the scenes” in order to protect data. CONTROL-M/Tape controls all media access operations (for example, open, close, mount) as they are performed.

The Life Cycle of a Data Set

During production activity, data sets are constantly being accessed (mounted, opened, closed, kept, and so on). CONTROL-M/Tape controls all media access behind the scenes in the following manner:

Job Initialization

The volume serial number can be changed by dynamic stacking.

Mount

Mount messages can be altered by CONTROL-M/Tape to increase their relevance (for example, add pool name to mount messages).

Open

Checks are performed to ensure that the specified operation is valid for the mounted volume (for example, verification that the mounted volume is a scratch volume, verification that the mounted volume was allocated from the appropriate pool, verification that only EDM can write on EDM volumes).

Close

The Media Database is updated (for example, number of blocks in the data set, space used). Retention and vaulting periods are recorded in the Media Database.

Features provided by CONTROL-M/Tape real-time operations include:

- Protection against overwriting data sets accidentally.
- Verification that mounted tapes are taken from the correct pool.
- Dynamic data set stacking.
- Statistics on all media operations (when volumes are mounted, opened, and closed).

Maintenance

Maintenance procedures run automatically on a daily basis. The Media Database is scanned and the following maintenance operations are performed:

Table 176 CONTROL-M/Tape Maintenance Procedures

Procedure	Description
Retention Management	A data set is scratched when its retention period has been exceeded. A volume is scratched when all data sets on the volume have been scratched.
Vault Management	Movement of volumes within, and between, the Active library and vaults is supervised.
Stacking Database Update	The Stacking Database is updated with statistics for each data set.
Media Database backup	The Media Database and the Trace file are backed up using a standard backup product. The backup is synchronized with CONTROL-M/Tape operations using special trace checkpoints.
Rule Refresh	Rule definitions are updated in the Real-time environment (only mandatory if performing daily rule scheduling).

Reports are produced informing the operator of the above operations.

Initialization

The first step in using CONTROL-M/Tape is to initialize CONTROL-M/Tape in each CPU. This is done by starting procedure CTTINIT, and is usually performed as part of the IPL process. The initialization process establishes the CONTROL-M/Tape Real-Time environment, by

1. creating the main CONTROL-M/Tape Control Table (TCT) in Extended Common Storage Access (ECSA)
2. creating a CONTROL-M/Tape subsystem if dynamic subsystem installation was requested

NOTE

The subsystem is named CTTD, and cannot be renamed.



3. loading and defining the CONTROL-M/Tape SVC, if dynamic SVC installation was requested by setting the DYNSVC installation parameter to Y in the CTTPARM member

The SVC number can be specified as an installation parameter.

4. establishing the Write to Operator (WTO) intercept so that mount messages can be modified.
5. establishing the VOLSTAT intercept, so that I/O errors on tapes can be tracked by CONTROL-M/Tape
6. establishing interfaces between CONTROL-M/Tape and the operating system, if dynamic interface installation was requested by setting the DYNINTR parameter to Y in the CTTPARM member

This is accomplished by setting intervention points in the operating system where CONTROL-M/Tape obtains control. These interfaces remain until a termination process is run

7. opening the files necessary for the Real-Time environment: Media Database, Trace file and Stacking Database
8. loading modules into ECSA and setting their entry point in the TCT
9. loading rule tables, pool definitions, vault definitions, and view definitions into ECSA, and setting their address in the TCT

10. activating the CONTROL-M/Tape subsystem

The block of information in common storage containing key control data and pointers is called the CONTROL-M/Tape Control Table (TCT). Its common storage address is used by all real-time components (that is, the CONTROL-M/Tape SVC and the subsystem). All activity starts from this block, which contains pointers to all CONTROL-M/Tape tables and modules in storage. The control block, along with its related routines, remains in common storage until CONTROL-M/Tape is shut down.

Upon completion of the initialization process, the CONTROL-M/Tape Real-Time environment is established and CONTROL-M/Tape takes control of removable media processing.

After initialization, no address space is needed for the CONTROL-M/Tape environment, even though CONTROL-M/Tape is active in the system.

Termination

Operate CONTROL-M/Tape from computer startup to shutdown (meaning, all the time) so that it can intercept all removable media management activities. Information for jobs that access removable media while CONTROL-M/Tape is inoperative is not tracked.

When CONTROL-M/Tape is terminated, a check is triggered for active jobs that access removable media in the system. If such jobs exist, you are prompted to cancel the termination, retry the termination, or continue (force) the termination.

When CONTROL-M/Tape is terminated, all traces of the CONTROL-M/Tape Real-Time environment are removed from the system, including the following:

- Interfaces established between CONTROL-M/Tape and the operating system (that is, intervention points in the operating system) are removed.
- The CONTROL-M/Tape SVC is removed from the system.
- The WTO Intercept is disabled; mount messages are no longer modified.
- The VOLSTAT intercept is disabled; I/O errors on tapes can no longer be tracked by CONTROL-M/Tape.

Environment Verification

Whether CONTROL-M/Tape performs real-time operations during volume access depends on:

- Whether the CONTROL-M/Tape Real-Time environment has been established.
- Whether CONTROL-M/Tape is currently in an active state, and not in a suspended or dormant mode.

Whenever CONTROL-M/Tape takes control during volume processing, it attempts to locate the CONTROL-M/Tape Control Table. The CONTROL-M/Tape Control Table is loaded into memory during Initialization. For additional information, see [“Initialization” on page 400](#).

If the CONTROL-M/Tape Control Table is not found, CONTROL-M/Tape halts the job and issues a message to the operator. The operator can then choose to:

- Let the job continue without CONTROL-M/Tape intervention.
 - Abend the job.
 - Start up CONTROL-M/Tape and continue job processing.
- If the CONTROL-M/Tape Control Table is found, the current status of CONTROL-M/Tape is checked.

If CONTROL-M/Tape is active, processing continues normally.

- If CONTROL-M/Tape is dormant, the job continues without CONTROL-M/Tape intervention.
- If CONTROL-M/Tape is suspended, any job trying to access tape volumes is halted and the operator is notified.

NOTE

For a discussion of active, dormant, and suspended modes, see the topic about the CONTROL-M/Tape initialization CTTINT procedure in the *INCONTROL for z/OS Administrator Guide*.

If a job is failed by CONTROL-M/Tape, the job abends with user code 242 and a specific reason code. The abend is preceded by a message describing the problem.

Whenever possible, CONTROL-M/Tape checks are performed before the operator mounts the volume, thus saving operator time and computer resources.



CONTROL-M/Tape Rules

Most CONTROL-M/Tape decisions are driven by parameters specified in the user-defined rules.

Loading and Accessing Rules in Memory

All requested rule tables are loaded during initialization from the definition library. A reload of these tables can be requested at any time.

If a reload is requested, a new rule table is created in memory. Rule searches that started prior to the completion of the new rule table continue using the old table. When these rule searches are completed the old table is deleted from memory. Rule searches that begin after the new table is completed use the new table.



NOTE

The rule search algorithm can be activated by ISPF panels in order to simulate the actions that are performed during normal data processing. This simulation enables you to test that rules are performed according to your specifications. For additional information, see [“T1: Simulate CONTROL-M/Tape Rules” on page 256](#).

Action Categories

At the first real-time intervention point for a given data set, CONTROL-M/Tape searches through the list of rules to establish the following Action categories:

- Stacking
- Pool Allocation
- Retention Criteria
- Vault Patterns
- Other Actions (for example, SHOUT message to a user, add or delete prerequisite conditions)

As CONTROL-M/Tape searches through the list of rules, it locates handling instructions for each of these Action categories.

“Generic” rules can be defined to ensure that CONTROL-M/Tape always has default actions to perform for each Action category.

Rule Order

The order that rules are loaded into memory has a direct impact on CONTROL-M/Tape operations. (For additional information, see “Rule Search” on page 406.) The order is established at the time of rule definition. Either of the following orders can be selected:

Table 177 CONTROL-M/Tape Rule Orders

Order	Description
Non-Sorted	Rules are listed in the order in that they were defined.
Sorted	Rules are listed in descending alphabetical order, known in CONTROL-M/Tape terminology as Best Match Order. The order of precedence in this order is described below under “Best Match Order.”

To sort the rules in a table, specify Y (Yes) in the AUTOMATIC RULE SORTING field in the Rule Definition entry panel. When automatic rule sorting is enabled, CONTROL-M/Tape maintains the rules in sorted order at all times. For example, when the insert option is specified, the newly inserted rule is automatically placed in the appropriate position in “Best Match Order.”

To keep rules in non-sorted order, specify N (No) in the AUTOMATIC RULE SORTING field in the Rule Definition entry panel. Rules remain in the order that the user defined them.

Rule order applies to the order of rules within each table. The order of the tables, however, is controlled by the rule list specified in the initialization procedure CTTINIT. For more information, see “CONTROL-M/Tape Initialization – Procedure CTTINIT” in the *INCONTROL for z/OS Administrator Guide*.

Best Match Order

Best Match Order sorts the rules according to the following order of precedence:

1. PRIORITY–Assigned priority values in descending alphabetic order.
2. ON DATASET–Data set name (alphabetic values) in descending alphabetic order.
3. ON JOBNAME – Job name (alphabetic values) in descending alphabetic order.
4. ON–Rules containing ON statements other than ON DATASET have a higher priority than rules not containing such ON statements.

Rules with the most detailed, specific criteria are listed before more generic rules. This way, CONTROL-M/Tape can locate the rule that meets exact search criteria quickly. If no best match rule is located, generic rules listed at the end of the list can be used (similar to defaults).

Table 178 Generic Rules Applied When No Best Match Rule is Located

Parameter	Order	Description
PRIORITY	99-0 ZZ-A	The PRIORITY subparameter takes precedence over all other subparameters. This allows the user to override the sort order for any rule by simply changing the priority.
ON DATASET	9-0 Z-A ? *	Because the data set name is the most specific component in search criteria, it has the second highest precedence. The order is reverse (descending) alphabetic, which means that ABC* appears before AB*.
ON JOBNAME	9-0 Z-A ? *	The order is reverse (descending) alphabetic, which means that ABC* appears before AB*.
ON	(yes) (no)	Rule definitions that contain ON parameters other than ON DATASET (for example, MEDIA, VOLUME, ACCOUNT) are more specific than rule definitions without such ON parameters. Therefore, rule definitions with such ON parameters are listed before rule definitions without them.

Figure 215 CONTROL-M/Tape Sample Rule List – Best Match Order

```
RULES OF LIBRARY: CTT.PROD.RULES                                TABLE: AAM17  
COMMAND ==>                                                    SCROLL==> CRSR  
OPT   RULE --- PRI   DATASET ----- JOBNAME MORE  
      NEWTAPE    09 *  
      BWEEK       01 BACKUP.WEEK.*  
      BMONTH      01 BACKUP.MONTH.*  
      BACKUP       01 BACKUP.*  
      VAULTVOL     01 ACC*  
      TAPEUTIL     01 ?ACC?  
      STARTLBL     01 *ACC  
      SETMODE      01 *ACC  
      DEFAULT      01 *  
  
===== >>>>>>>>>>>>>>> NO MORE RULES IN THIS TABLE <<<<<<<<<<<<<<< =====
```

```
OPTIONS: S SELECT D DELETE I INSERT                            10.57.59
```

Rule Search

The purpose of the rule search is to fill in (locate actions for) all Action categories. (Action categories are described under “Loading and Accessing Rules in Memory” on the preceding pages.) For example, CONTROL-M/Tape tries to determine, based on rule specifications, how stacking, pool allocation, retention, vaulting, and so on are performed.

CONTROL-M/Tape may have to search several rules until all Action categories are located. The search continues until all Action categories are located, or until a matching rule is found that specifies the expression CONTINUE SEARCH=N (No).

Action categories that are not filled in by a specific rule for a given data set can be filled in by more generic rules.

To understand how the rule search works, examine the examples below:

Examples

Example 1

In the sample Rule list below, several rules may exist that relate to (and operate on) the same data set.

Table 179 Sample Rule List – Example 1

		Selection Criteria							
Rule	Priority	Data Set	Job Name	Account	Program	Owner	Media	Volume	Continue Search
1		ABCD	PAY786						NO
2		ABCD	*						YES
3		ABC*	*						YES
4		A*	*						NO
5		*	PAY*						NO
6		*	*						

NOTE



- Rule 1 operates on data set ABCD when job PAY786 is run
- Rule 2 operates on data set ABCD under any other situation
- Rule 3 operates on all data sets whose names begin with ABC, thus including data set ABCD

Assume that JCL specifies data set ABCD within job XYZ. CONTROL-M/Tape searches the sample Rule list above and finds that Rule 1 matches the JCL data set name. CONTROL-M/Tape then attempts to match the job name, that (in this case) does not match. CONTROL-M/Tape then searches the next rule in the Rule list and finds a match. Some or all of the Action categories are satisfied by the parameters specified in Rule 2.

If additional Action categories need to be satisfied, CONTROL-M/Tape continues the rule search by checking Rules 3 and 4, that both meet the search criteria for data set name. However, CONTROL-M/Tape stops searching after Rule 4, because the CONTINUE SEARCH parameter is set to NO.

If certain Action categories remain unfilled after the search is completed, CONTROL-M/Tape uses the default values from the installation parameters (CTTPARM member definitions) For example, the retention is taken from the DEFEXPDT parameter.

Example 2

Assume that the following Rule list is loaded into common storage. The only difference between this list and the previous list is that a new Rule 1 has been added. Rule 1 has the highest priority in the list and applies to any data set accessed by a job named XYZ.

Table 180 Sample Rule List – Example 2

		Selection Criteria							
Rule	Priority	Data Set	Job Name	Account	Program	Owner	Media	Volume	Continue Search
1	Highest	*	XYZ						YES
2		ABCD	PAY786						NO
3		ABCD	*						YES
4		ABC*	*						YES
5		A*	*						NO
6		*	PAY*						NO
7	Lowest	*	*						

Using the same search criteria as in the previous example, CONTROL-M/Tape encounters a JCL that specifies data set ABCD within job XYZ. CONTROL-M/Tape searches the Rule list above and finds that Rule 1 applies because it matches the data set mask specification and the job name. CONTROL-M/Tape fills in all the Action categories that are specified in Rule 1. If there are still remaining attributes to be filled in, CONTROL-M/Tape continues searching the Rule list. In the list above, these Action categories may come from any of Rules 3, 4, or 5 – in that sequence. Rule 2 does not apply because it contains a different job name.

If a rule is not located for a specific data set or volume, actions can still be taken based on generic rules. Generic rule actions are specified using mask character * in any of the selection criteria fields.

Volume Processing

As access to a certain volume is attempted, the Media Database is checked to make sure that the volume is controlled by CONTROL-M/Tape. If the volume does not exist in the Media Database, CONTROL-M/Tape can either add it automatically (by Automatic Check-In), or prompt the operator to determine how to handle the situation (for example, ignore, define, abend).

If the volume is found in the Media Database, CONTROL-M/Tape checks to see if the volume resides in the active library (MAINLIB). If the volume is not listed in the active library (meaning, the volume has an Out Location associated with it, or it is being stored in a local vault), a warning message is issued to the operator. If the volume is assigned to a Remote vault, the operator is given the option to abend the job or let it continue.

CONTROL-M/Tape controls all types of label processing supported by the operating system:

- SL–Standard Label
- AL–ANSI Label
- NSL–Nonstandard Label
- NL–No Label (NL)
- BLP–Bypass Label Processing

NL/BLP

For NL/BLP requests, the operator can be prompted to confirm that the mounted volume is the volume requested by the user (by JCL, dynamic allocation, and so on). Installation parameters determine whether or not confirmation is required. Nonspecific (SCRATCH) tape requests always result in a prompt.

After mounting a scratch NL tape in response to a user request for a nonspecific NL/BLP tape, the operator is prompted by CONTROL-M/Tape twice (or more, if necessary) to confirm the volser of the mounted volume. CONTROL-M/Tape does not accept the mounted tape until the operator replies two consecutive times with the same volser. Once the operator replies two consecutive times with the same volser, that volser is used by CONTROL-M/Tape for processing Media Database access and by the operating system for cataloging, keep message, and so on.

After mounting a tape in response to a user request for a specific NL/BLP tape, the operator is prompted by CONTROL-M/Tape to confirm the volser of the mounted volume.

If the operator replies with the same volser that was requested by the user, CONTROL-M/Tape accepts the request and processing continues.

If, however, the operator replies with a volser that is different from the volser requested by the user, CONTROL-M/Tape keeps prompting the operator for the volser of the volume mounted until the operator provides two consecutive identical replies. Once two identical, consecutive replies have been received, CONTROL-M/Tape proceeds as follows:

- If the volser specified in the reply is identical to the volser requested by the user, processing continues.
- If the volser specified in the reply is different from the volser requested by the user, the current volume is rejected (by normal MVS reject). The mount request is issued again and this entire process repeats.

The message ID of the mount message (IEF233 or IEC501) is changed by CONTROL-M/Tape to CTT100A. If a pool name is inserted in the message the message ID is changed to CTT101A. For more information, see “Scratch Processing” in this chapter.

Because CONTROL-M/Tape is responsible for data integrity, the operating system expiration protection message IEC507D, “E ... REPLY ‘U’-USE OR ‘M’-UNLOAD,” is usually suppressed. This message is not suppressed when:

- CONTROL-M/Tape is operating in Global Test or Phased mode.
- A rule specifies that the current data set is managed in Test mode.
- The volume is not controlled by CONTROL-M/Tape (meaning, the volume is not registered in the Media Database, even if the volume is to be defined dynamically to CONTROL-M/Tape).

If the volume is marked as in a remote vault, this indication is corrected at this time, and the tape is returned from borrowed status.

Scratch Processing

When a scratch volume is requested, CONTROL-M/Tape rules are searched to determine if the output volume belongs to a specific pool. If so, the mount message is modified to request a specific pool. Instead of SCRTCH/PRIVAT, the message contains the name of the pool from that the volume is to be taken (meaning, not a specific VOLSER).

After a volume is mounted, CONTROL-M/Tape verifies that the mounted volume is a scratch volume and that the volume belongs to the requested pool. If the volume does not belong to the pool, it is rejected and another volume is requested.

Pool definitions are loaded during initialization into memory and are incorporated as part of the Real-Time environment. They can be reloaded at any time without bringing CONTROL-M/Tape down. This allows you to enlarge the pool at any time.

You can prevent read access to scratch volumes. This means that if a job requests a specific volume that is marked as scratch, CONTROL-M/Tape fails this job for security reasons. This process is controlled by installation parameter SCRPROT.

Dynamic Volume Chaining

Volumes are normally chained into a group when a data set spans more than one volume. This can happen when the data set is created or recreated, or when the data set is extended (using DISP=MOD access).

However, CONTROL-M/Tape also chains a set of volumes that is accessed in sequence when an active volume is dismounted and a scratch volume is mounted during End-of-Volume processing. In this case, the volumes are kept as one chain in the Media Database (meaning, they point to each other) if the dismounted (active) volume is not part of a different volume chain.

Example

Assume:

- A job specifies the expression VOL=SER=(VOL1,VOL2) and successfully reads a data set that spans volumes VOL1 and VOL2.
- VOL1 is recorded in the Media Database as a single active volume; VOL2 is marked as a scratch volume; and CONTROL-M/Tape is not aware that the data set continues from VOL1 to VOL2.

After the job is run, VOL1 and VOL2 are chained in a group in the Media Database, where VOL1 is the first volume and has a volume sequence number of 1, and VOL2 is the second volume and has a volume sequence number of 2.

External Volumes

Many data centers regularly receive volumes from other sites. Such data centers can introduce these volumes to CONTROL-M/Tape by checking them in using the Online facility, or using Automatic Check-In.

In either case, these volumes are marked as External volumes. (In Automatic Check-In, this is controlled by an installation parameter.)

External volumes are listed in a separate pool in the report produced by Retention Management utility CTTRTM.

External volumes can optionally be deleted from the Media Database when they are expired by utility CTTRTM.

When deleted, External volumes are actually deleted from the Media Database, unlike regular volumes, that are marked Deleted but remain in the Media Database.

SL-NAME Concept

When checking in external volumes, the volser of a volume being checked-in may be identical to the volser of a volume already in the Media Database. This creates a problem because the volser must be a unique identifier of a volume in the Media Database.

To solve this problem, CONTROL-M/Tape uses fields VOLSER and SL-NAME (Standard Label Name) to provide MVS override logic, as described below:

When checking in a volume (normally by screen TC), the user should:

- Assign a new, unique volser to the checked-in volume. This volser is specified in field VOLSER.
- Specify the original volser (the volser in the Standard Label of the volume) in field SL-NAME.
- Specify the new (unique) volser on the label physically applied to the tape (meaning, the gummed label).

From this point on, the new volser is used to identify the volume (including in the MVS Catalog if cataloged, JCL references to the volume, and so on).

When a job requests a specific volume by JCL, the operating system checks that the volser on the volume's standard label matches the requested volser to ensure that the mounted volume is the volume that was requested.

If the requested volser and the standard label of the mounted do not match, the operating system normally rejects the volume. However, when a volume is defined in CONTROL-M/Tape with different values in the SL-NAME and VOLSER fields, CONTROL-M/Tape intervenes in operating system processing.

In this case, if the value in field SL-NAME matches the volser in the mounted tape's standard label, CONTROL-M/Tape allows the volume to be accepted by the operating system.



NOTE

The SL-NAME mechanism works only for standard label tapes.

An operator must not mount an SL-NAME volume in response to a request for a scratch tape. If an SL-NAME volume were mounted as a scratch tape, CONTROL-M/Tape would incorrectly update the volume record (in the Media Database) whose volser matches the volser in the SL-NAME volume's standard label.

The SL-NAME mechanism is intended only for reading tapes. Do not write or rewrite to an SL-NAME volume. When you overwrite a volume, MVS rewrites the volume's label. For an SL-NAME volume, this would replace the volume's original volser with the volser requested in the JCL.

Example

A user checks in an external volume whose volser is 111111 that is identical to an already existing volume in the Media Database.

The user assigns a new, unique value, NEW111, to field VOLSER in the Check-In screen, and places value 111111 in field SL-NAME. In addition, the user can place a gummed label specifying volser NEW111 on the checked-in volume.

When next requesting this volume, the user specifies volser NEW111.

Normally, MVS would determine that the volser on the volume's standard label (111111) does not match the requested volser (NEW111), and would reject the volume. However, CONTROL-M/Tape recognizes that the SL-NAME and VOLSER do not match, and it performs its own checks.

CONTROL-M/Tape determines that the value in field SL-NAME matches the volser in the mounted volume's standard label (111111), so CONTROL-M/Tape allows the volume to be accepted by the operating system.

The volumes are identified as follows.

Table 181 SL-NAME Concept Example

Volume	VOLSER field in MDB	SL-NAME field in MDB	Volser in volume label	Volser in JCL and mount messages	Gummed label
Regular	111111	111111	111111	111111	111111
SL-NAME	New111	111111	111111	New111	New111

When you introduce a range of volumes with duplicate volsers, you can use utility CTTDL to automatically assign values to the VOLSER and SL-NAME fields of each of the volumes. For more information, see utility CTTDL in the *INCONTROL for z/OS Administrator Guide*.

External Data Manager Volumes

External Data Managers, such as DFHSM, DMS/OS and ASM-2, normally have their own retention management mechanisms for tapes created under their control. Rules can be defined to identify those External Data Managers to CONTROL-M/Tape by their program name, job name, data set name, and so on.

If an External Data Manager creates a data set on a scratch volume, this volume is marked as an External Data Manager (EDM) volume. Only an External Data Manager is able to modify EDM volumes.

NOTE



The concept of External Data Manager volumes is different than the concept of External volumes.

An External Data Manager is allowed to create data sets only on scratch volumes, or volumes that are already marked as EDM volumes (meaning, controlled by a DO RETENTION=EDM statement in CONTROL-M/Tape rules).

CONTROL-M/Tape does not expire a data set or a volume that belongs to an External Data Manager. A special interface exists for the expiration of such volumes. For more information, see the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Administrator Guide*.

External Data Manager volumes are managed at the volume level and not at the data set level. This means that for a multiframe volume, only the first data set is recorded and the rest are ignored. For a multi-volume data set, no volume chaining occurs between different volumes. Each volume shows the same data set as a single volume data set. External Data Manager input operations are ignored by CONTROL-M/Tape. Only the creation of the first file of a volume is recorded.

NOTE



Abend retention cannot be specified for External Data Manager volumes. If a data set on an External Data Manager volume is not closed normally, the External Data Manager's retention is performed.

Robotic Tape Library Support

CONTROL-M/Tape supports various robotic tape libraries (for example, StorageTek, IBM 3495). If one or more robotic tape libraries exist at your site, specify the types of robotic tape libraries by installation parameter RBTTYPE in member CTT Parm.

When a tape volume is expired by CONTROL-M/Tape, each robotic tape library is informed of the new status of the volume. Whenever a tape volume is vaulted by CONTROL-M/Tape, the robotic tape library is instructed to eject the volume so that it is available for the operator.

The CONTROL-M/Tape interface with robotic tape libraries is performed by program CTTRBM, that is executed as an additional step in utilities CTTRTM and CTTVTM. CTTRBM is also called when you expire a volume using an online screen (Immediate Scratch) or using an External Data Manager interface. CTTRBM optionally calls user Exit CTTX008 before performing any robotic tape library request. Exit CTTX008 is called separately for each type of robotic library being processed. You can use this exit to influence robotic tape library processing. For more information, see the robotic tape library interface and virtual tape server chapter of the CONTROL-M/Tape Implementation Guide.

Data Set Processing

When access to an existing data set is attempted, CONTROL-M/Tape checks the entire data set name supplied in the JCL against the entries in the Media Database. The operating system compares only the last 17 characters against the data set header label.

When an output request is issued for multi-data set volumes, CONTROL-M/Tape checks that the file sequence is valid:

- A file can be created only if the previous file sequence number exists.
- A file cannot be overwritten if files with higher sequence numbers exist.

If, during a read or update request for an existing data set, the data set is not found in the Media Database, CONTROL-M/Tape can optionally define the data set dynamically. This can happen if the data set was created outside CONTROL-M/Tape control (for example, at another site).

Recreating Data Sets

Under certain special circumstances, CONTROL-M/Tape allows an existing data set to be recreated (meaning, overwritten).

The following restrictions apply:

- This is the last data set on the volume.
- The data set name is the same as that of the existing data set.
- The disposition is OLD (DISP=OLD).
- Y or P has been specified for either CONTROL-M/Tape installation parameter RECREATE, or statement DO RECREATE in a CONTROL-M/Tape rule.

There is an exception when the job that is accessing the data set is the same job that created the data set (that is, the job name and job ID of the job that is accessing the data set match the job name and job ID of the job that created the data set). In this case, the expression DISP=NEW is acceptable.

NOTE



Data sets with permanent retention are recreated only if P is specified for installation parameter RECREATE or statement DO RECREATE in a CONTROL-M/Tape rule.

Temporary Files

CONTROL-M/Tape does not record tape activity that is performed on temporary files. If a temporary file is created on a scratch tape, the tape remains a scratch tape throughout the life cycle of that temporary file.

CONTROL-M/Tape considers a file to be temporary only when it did not previously exist (that is, it is newly created), the volume that the data set is to be read from or written to is scratch, and one of the following applies:

- the expression DSN=&&name was specified
- the expression DISP=(NEW, DELETE) was specified
- the expression RETPD=0 has been specified in the LABEL parameter

NOTE



If CA1 was specified for CONTROL-M/Tape installation parameter EXPDTYPE, and the expression LABEL=EXPDT was specified for the file, the file is not considered temporary, even if one of the preceding conditions is true.

CONTROL-M/Tape Handling of Data Set Generations

Data set generations are successive versions of a data set. These versions may be identified as a Generation Dataset Group, or as Cycles of a data set (used to determine CONTROL-M/Tape data set retention).

Generation Data Groups (GDG)

Generation Data Groups (that is, GDG data set groups) are groups of data sets that can all be referred to by a common name. The operating system keeps generations in chronological order. The operating system retains a certain number of generations for each data set, and deletes obsolete generations as necessary.

Each generation of a data set is identified by a suffix that is added to the data set name. The suffix is in the following format:

GxxxxVyy

Where xxxx is a four-digit generation number (0001 through 9999) and yy is a two-digit version number (00 through 99).

For more information, see IBM document *DFSMS/MVS USING DATA SETS*.

Examples

A.B.C.G0001V00 is generation data set 1, version 0, in generation data group A.B.C.

A.B.C.G0009V01 is generation data set 9, version 1, in generation data group A.B.C.

CONTROL-M/Tape Handling of GDG Data Sets

CONTROL-M/Tape records GDG data sets using their full names (meaning, the GxxxxVyy suffix is included in the data set name). When CONTROL-M/Tape searches for rules to apply to a GDG data set, it first searches for a rule that matches the complete data set name (with the GDG suffix). If no rule matches the data set name with the GDG suffix, CONTROL-M/Tape searches for a rule that matches the data set name without the GDG suffix.

When collecting stacking statistics, CONTROL-M/Tape ignores the GxxxxVyy suffix (meaning, the same statistics are used for all generations of a specific data set).

CYCLE Type Retention and GDG Data Sets

CONTROL-M/Tape can recognize multiple data sets as different versions of the same data set. The criteria for determining if a data set is a new cycle (meaning, generation) of an existing data set, is specified using installation parameter CYCLECNT. Depending on the value specified for this parameter, a cycle may refer to a group of data sets with:

- The same name.
- The same name and the same creation date.
- The same name and the same job name.
- The same name, same creation date, and same job name.

Retention for a data set by CONTROL-M/Tape can be set according to cycle number. For example, if a rule indicates that only 10 cycles of a data set are retained, when the 11th cycle of the data set is created, the oldest cycle (generation) of the data set is automatically expired by the next run of CONTROL-M/Tape retention management utility CTTRTM.

Depending on how a DO RETENTION statement is specified, you can either indicate that only data sets with matching names are considered cycles of the same data set, or all data sets with a specified prefix are considered cycles of the same data set.

NOTE



CONTROL-M/Tape cycles do not have to consist of GDG data sets. However, if GDG data sets are retained by the CYCLES retention type, CONTROL-M/Tape ignores the GxxxxVyy suffix and recognizes different generations as being of the same data set.

Query of a Data Set Generation

The Inquire/Update screen of CONTROL-M/Tape can be used to display information about a specific generation of a data set or data sets.

To display a specific generation, indicate the generation number in parentheses after the data set name in the DSNNAME field of the Inquiry/Update entry panel. For example, DS1.LOG(-1).

The generation specified with the data set name can be a number from 0 to -99, where 0 is the current (newest) version of the data set, -1 is the second newest version of the data set, and so on. For example, PAYROLL.DB(-2) refers to the third most recent version of the data set.

If a data set name mask is specified in the DSNNAME field, CONTROL-M/Tape searches for the specified generation of all of the data sets that match the specified mask.

The following logic is used to determine the requested generation of each data set:

1. Data sets that match the mask are sorted according to data set name, creation date and creation time.
2. Each group of data sets with the same name (excluding the GxxxxVyy suffix) is considered a group of generations of the same data set.
3. The most recent version of each data set is considered generation 0, the next most recent generation is -1, and so on. The requested generation for each data set is displayed.



NOTE

The above logic applies to all data sets in the CONTROL-M/Tape Media Database, whether or not they are GDG data sets.

Example

If DB.LOG.*(-1) is specified in the DSNNAME field, and the following data sets are defined in the Media Database:

DB.LOG.Y2000.BACKUP	31/03/00
DB.LOG.Y2000.BACKUP	31/07/00
DB.LOG.Y2000.BACKUP	31/12/00
DB.LOG.Y2001.BACKUP	31/01/01
DB.LOG.Y2001.BACKUP	31/03/01

The following data sets are displayed:

DB.LOG.Y2000.BACKUP	31/07/00
DB.LOG.Y2001.BACKUP	31/01/01

Note that each data set displayed is the second most recent generation of its group.

CONTROL-M/Tape in a VTS Environment

VTS (Virtual Tape Server) is an IBM hardware component that uses fault tolerant RAID disks and IBM Magstar tape libraries to manage a series of virtual tape drives and virtual (logical) volumes for data sets at a site.

CONTROL-M/Tape handles volumes that are inside VTS in the same way in that it handles all other removable media. CONTROL-M/Tape manages the retention of VTS volumes and informs VTS using the CONTROL-M/Tape robot interface when a logical volume expires.

The CONTROL-M/Tape interface for IBM robots is used to keep the VTS database synchronized with the CONTROL-M/Tape Media Database.

Export/Import Interface in a VTS Environment

VTS logical volumes cannot be vaulted unless they are exported onto physical tapes. CONTROL-M/Tape automatically initiates the VTS Export/Import interface to export VTS logical volumes out of the VTS environment and to stack and vault those volumes onto physical tapes.

When exporting logical volumes, CONTROL-M/Tape groups together volumes with similar vaulting patterns. Each group is then written to separate physical tapes to be sent to different vaults, as necessary.

During the Export process, CONTROL-M/Tape produces the Import List Volume report that contains a list of the physical volumes that were written and the logical volumes that reside on them. After the Import List Volume report is written, a message similar to the following is displayed at the console:

```
CTT347I  IMPORT LIST VOLUME CREATED ON VOLSER VOL0011
```

To import physical tapes back to the VTS environment, perform the following steps:

1. Select and then load the physical tapes onto the VTS, based on the information in the Import List Volume report.
2. Issue the Import command at the control console. When issuing this command, refer to the volser (volume serial number) that was displayed in message CTT347I.

Refer to the IBM VTS documentation for instructions on how to load tapes and to enter the Import command at the console.

NOTE



Before attempting to use the VTS Export/Import interface, ensure that your current version of VTS supports the VTS Export/Import feature.

For information on implementing the CONTROL-M/Tape VTS Export/Import feature and the reports produced by the VTS Export/Import interface facility, see the robotic tape library interface and virtual tape server chapter of the CONTROL-M/Tape Implementation Guide.

Data Set Stacking in a VTS Environment

VTS performs stacking on logical volumes that are backed up on Magstar tape cartridges. CONTROL-M/Tape stacking is not necessary for these logical volumes.

CONTROL-M/Tape stacking can be used in the following ways in a VTS environment:

- Non-VTS volumes can be stacked (for example, for transfer to another site) using CONTROL-M/Tape rules with DO STACK statements and the CONTROL-M/Tape Dynamic Dataset Stacking facility.
- Data sets on VTS volumes can be copied to non-VTS volumes using CONTROL-M/Tape utility CTTSBD in batch mode.

For more information about utility CTTSBD, see the *INCONTROL for z/OS Utilities Guide*.

BLP Processing

When trying to access data sets on an SL tape using BLP (Bypass Label Processing), CONTROL-M/Tape translates the file sequence numbers to their SL equivalents. This way, input dsname verification is performed against the correct data set in the Media Database. This also applies when a data set is created (or dynamically defined when input) on an SL tape. In this case, the original file sequence numbers are used. If the original file sequence numbers do not translate to the beginning of a data set, CONTROL-M/Tape bypasses processing for the current data set (meaning, it is not recorded in the CONTROL-M/Tape Media Database).

A different BLP processing method can be selected by installation parameter BLPDEF. For more information, see the *INCONTROL for z/OS Installation Guide*.

NOTE



CONTROL-M/Tape is unable to determine if a scratch volume that was never used is SL. Such volumes are treated as if they are NL.

CONTROL-M/Tape Bypass

By specifying the expression EXPDT=98000 in your JCL, you can instruct CONTROL-M/Tape not to intervene in your media processing.

Since this can cause a potential break in security, this option can be controlled by user Exit CTTX003 (using an existing security package to control this option).

CONTROL-M/Tape honors an input request or any request concerning non-CONTROL-M/Tape volumes without confirmation. When the expression EXPDT=98000 is specified in an output request for a CONTROL-M/Tape controlled volume, the operator may (depending on installation parameters) be asked to confirm the bypass request. The operator can instruct CONTROL-M/Tape to honor the bypass, to abend the job, or to ignore the bypass request and continue normally.

Displaying Media Database Information on a z/OS Console

Information obtained from the Media Database volume and data set records can be displayed on a z/OS console when the Inquiry and Update screen (option TI on the IOA Primary Option menu) is not readily available through other environments (such as TSO/E or the IOA online monitor). This display is designed for operations personnel, for whom the MVS console is often more readily available than a TSO/E session. For more information on the Inquiry and Update facility, see [“Inquiries and Updates” on page 155](#).

Display Commands

The command used to display Media Database information on the console depends on the type of records (volume, data set, or group (chain) of volumes) to be displayed.

Just as record information can be displayed in the Inquiry/Update screen using different display types, record information can also be displayed on the console using different “views”. A predefined, default view is provided for each record type to be displayed. The INCONTROL administrator can modify these views and define other, optional views.

Format of the display command is:

```
CTT rectype parms[,v=viewname]
```

where:

- *rectype* is the record type indicator. Mandatory. Valid values:
 - DVL Volume record
 - DDS Data set record
 - DVG Group (chain) of volumes

- *parms* are the parameters identifying the desired record. Mandatory. This includes *volser* (volume serial number) for all record types, and *labelnum* (the number of the data set on the volume) for data set records only.
- *viewname* is the view (format) in which to display the information. Optional. If not specified, the default view is used.

Valid display commands are shown below:

Table 182 Media Database Information Display Commands

Command	Description
CTT DVL <i>volser</i> [,v= <i>viewname</i>]	Displays information about the volume referenced by <i>volser</i> .
CTT DDS <i>volser</i> , <i>labelnum</i> [,v= <i>viewname</i>]	Displays information about the data set referenced by <i>volser</i> and <i>labelnum</i> .
CTT DVG <i>volser</i> [,v= <i>viewname</i>]	Displays information about a group (chain) of volumes. The group is referenced by specifying any of the <i>volser</i> s in the group.

Defining and Loading Views

The INCONTROL administrator can modify the default views for the display commands, as well as define and modify optional views. Samples of the default views are provided with CONTROL-M/Tape that can be used as is, or modified as needed. For more information on defining views, see the CONTROL-M/Tape chapter in the *INCONTROL for z/OS Administrator Guide*.

All views are loaded when CONTROL-M/Tape is first initialized. Views can also be loaded after CONTROL-M/Tape has been initialized, by issuing the following command at the console:

```
S CTTINIT,PARM='RELOAD,TBLT=VIEW'
```

Modifications to views only take effect after CONTROL-M/Tape has been reinitialized or after this command has been issued.

Example Commands and Views

The following are example display commands and the views displayed by them:

DVL Command

This example displays information about volume VOL008, using view V as defined by the INCONTROL administrator

Figure 216 Media Database Display – DVL Command Example

20:44:18.26	N70	00000290	CTT DVL VOL008,V=V				
20:44:18.32	TSU20858	00000090	CTT700I VOLSER..... VOL008	VOLFLAGS...	MANUPDAT		
20:44:18.33	TSU20858	00000090	CTT700I VAULT..... V1	VLTEXTDT...	1999/10/03	VLTEXTY1...	
	VCAT						
20:44:18.34	TSU20858	00000090	CTT700I VLTEXPD1... 1077952576	RELATN#1...		VLTEXTY2...	
20:44:18.35	TSU20858	00000090	CTT700I VLTEXPD2... 1077952576	RELATN#2...		VLTEXTY3...	
			40404040				
20:44:18.36	TSU20858	00000090	CTT700I VLTEXPD3... 1077952576				
20:44:18.38	TSU20858	00000090	CTT700I VAULT..... V2	VLTEXTDT...			
	VLTEXTY1...						
			VDATE				
20:44:18.39	TSU20858	00000090	CTT700I VLTEXPD1... 1999/10/04	RELATN#1...		VLTEXTY2...	
20:44:18.40	TSU20858	00000090	CTT700I VLTEXPD2... 1077952576	RELATN#2...		VLTEXTY3...	
			40404040				
20:44:18.42	TSU20858	00000090	CTT700I VLTEXPD3... 1077952576				
20:44:18.43	TSU20858	00000090	CTT700I VAULT..... V3	VLTEXTDT...			
	VLTEXTY1...						
			VDATE				
20:44:18.44	TSU20858	00000090	CTT700I VLTEXPD1... 1999/10/06	RELATN#1...		VLTEXTY2...	
20:44:18.45	TSU20858	00000090	CTT700I VLTEXPD2... 1077952576	RELATN#2...		VLTEXTY3...	
			40404040				
20:44:18.47	TSU20858	00000090	CTT700I VLTEXPD3... 1077952576				

DDS Command

This example displays information about data set 1 on volume VOL001.

Figure 217 Media Database Display – DDS Command Example

20:36:04.58	N70	00000290	CTT DDS VOL001,1				
20:36:04.65	TSU20858	00000090	CTT700I DSNAME..... MY.DATABASE				
20:36:04.68	TSU20858	00000090	CTT700I DSVOLSER... VOL001	VOLSNUM....	6		

DVG Command

This example displays information about the group (chain) of volumes that includes volume VOL001.

Figure 218 Media Database Display – DVG Command Example

20:22:00.42	N70	00000290	CTT DVG VOL001		
20:22:00.48	TSU20858	00000090	CTT700I VOLSER..... VOL001	VOLFLAGS...	
20:22:00.57	TSU20858	00000090	CTT700I VOLSER..... VOL002	VOLFLAGS...	
20:22:00.58	TSU20858	00000090	CTT700I VOLSER..... VOL003	VOLFLAGS...	MANUPDAT
20:22:00.59	TSU20858	00000090	CTT700I VOLSER..... VOL004	VOLFLAGS...	
20:22:00.60	TSU20858	00000090	CTT700I VOLSER..... VOL005	VOLFLAGS...	
20:22:00.64	TSU20858	00000090	CTT700I VOLSER..... VOL006	VOLFLAGS...	

Media Database Update

As soon as validity checks have been completed and the job is allowed access to the data set on the volume, CONTROL-M/Tape records relevant information in the volume and data set records in the Media Database.

When a new data set is created, CONTROL-M/Tape records the data set attributes such as block size, record length, record format, and so on in the data set record of the Media Database. The open count, number of active data sets on the volume, and so on are also recorded in the volume record of the Media Database.

Whenever a volume's data set is opened, CONTROL-M/Tape updates "last access" information in the data set record. This information includes: Date, time, job name, step name, DD name, program name, CPU ID, device address, and step completion code. These fields are tracked and stored as separate fields for the following events: Last read access, last write access and creation time. The volume record also contains last access date, time, and job name.

When a data set is opened, CONTROL-M/Tape updates the data set information in the Media Database with its abend retention period. If the data set is closed normally, the data set is updated with its normal retention period. This ensures that, in case of system crash before the data set is closed normally, the abend retention period for the data set is established.

When "end of volume" is encountered, CONTROL-M/Tape chains together the volumes of a multi-volume data set. "End of volume" processing is actually a combination of "close" processing for the old volume and "open" processing for the new volume.

When a data set is closed, CONTROL-M/Tape updates the following:

- Normal retention (for data sets)
- Vault pattern (for volumes)
- Block count (for data sets)
- EXCP count (for both volumes and data sets)
- Compressed size (for data sets)
- Uncompressed size (for data sets)
- Unused space (for volumes)

Retention and vaulting information are updated for new data sets and for data sets created dynamically by CONTROL-M/Tape. The vault pattern is updated only if the volume contains no previous vault pattern. The retention and vaulting information are obtained from the rule table currently in memory, as described in [“Rule Search” on page 406](#).

Fast Positioning a Tape

The Fast Positioning facility cuts the time required to position a tape to a data set. With Fast Positioning, the operating system does not sequentially search the tape for a data set. Instead, the operating system passes the block ID of the data set, which is the location of the data set on the tape, to the tape device. Using this block ID, the tape device positions the tape at the beginning of the data set. If a tape contains many data sets or large data sets, fast positioning can be up to 14 times faster than searching sequentially for the data set.

CONTROL-M/Tape greatly simplifies implementation of Fast Positioning. Implementation can be accomplished by defining a single CONTROL-M/Tape rule. CONTROL-M/Tape implementation of Fast Positioning is invisible to your applications, and requires no changes to the programs or JCL.

NOTE



CONTROL-M/Tape does not directly Fast Position a tape. It instead requests the service from the operating system.

Fast Positioning of CONTROL-M/Tape works as follows:

1. At the time of data set creation, CONTROL-M/Tape retrieves the block ID of the data set from the operating system, and stores it in the CONTROL-M/Tape Media Database. The block ID identifies the data set location.
2. During subsequent access of the data set, CONTROL-M/Tape retrieves the block ID from the Media Database, and passes it to the operating system, that then fast positions the tape to the specific location.

CONTROL-M/Tape can apply Fast Positioning to the following data set access situations:

- Reading a data set
- Rewriting a data set.
- Adding a data set to the end of a tape.
(In this case, CONTROL-M/Tape uses the block ID at the end of the tape volume.)

Implementing Fast Positioning

To implement Fast Positioning for a data set, define a DO FASTPOS statement in a rule that applies to a data set, as follows:

- If CONTROL-M/Tape is to be run in production mode, set the DO FASTPOS parameter to YES or to OVERRIDE.
- If CONTROL-M/Tape is to be run in test mode, set the DO FASTPOS parameter to TEST.

For more information, see “DO FASTPOS Values” below.

Requirements for Fast Positioning

For CONTROL-M/Tape to instruct the operating system to fast position a tape to a data set, all of the following conditions must be met:

- A rule is defined with an appropriate DO FASTPOS statement.
- The tape device supports Fast Positioning. Tape devices 3480, 3490, 3490E, and 3590 all support Fast Positioning.
- The tape is a standard label tape.

- Either:
 - You are reading or rewriting a data set whose position CONTROL-M/Tape has stored in the Media Database, or
 - You are adding a data set to a tape, and CONTROL-M/Tape has stored the position of the logical end of tape in the Media Database.
- If you are rewriting a data set, you are not appending to the data set (that is, the JCL does not include the expression DISP=MOD, and the program does not open the data set with an option that implies that expression).

DO FASTPOS Values

Any of several values can be specified in a DO FASTPOS statement. The value specified determines how CONTROL-M/Tape handles Fast Positioning. Valid values are:

Table 183 DO FASTPOS Values

Value	Description
YES	Use CONTROL-M/Tape Fast Positioning. However, if the program has its own Fast Positioning mechanism, that mechanism is used and CONTROL-M/Tape does not intervene.
NO	Do not use CONTROL-M/Tape Fast Positioning. If the program has its own Fast Positioning mechanism, that mechanism is used and CONTROL-M/Tape does not intervene.
TEST	Same as YES, but in addition use CONTROL-M/Tape Fast Positioning when CONTROL-M/Tape is running in Test mode.
OVERRIDE	Same as YES, but use CONTROL-M/Tape Fast Positioning even if the program has its own Fast Positioning mechanism. However, if CONTROL-M/Tape Fast Positioning is not appropriate (for example, you are appending to the data set), and the program has its own Fast Positioning mechanism, then that mechanism is used and CONTROL-M/Tape does not intervene.

Considerations

CONTROL-M/Tape can use Fast Positioning for a data set even if other data sets on the tape were created without Fast Positioning (meaning, a tape can contain any combination of data sets created with and without Fast Positioning).

CONTROL-M/Tape receives the position of a data set from the operating system and records the position in the Media Database only when you create or rewrite the data set, not when you read it. Therefore, if you create a data set without recording its position (for example, with the expression DO FASTPOS=NO), CONTROL-M/Tape cannot use Fast Positioning for that data set. Even if you later set DO FASTPOS to YES, and then read the data set, CONTROL-M/Tape cannot use Fast Positioning for it.

If CONTROL-M/Tape determines that the requested Fast Positioning is not appropriate (for example, the JCL includes the expression DISP=MOD) and the application does not have its own Fast Positioning mechanism, CONTROL-M/Tape allows the operating system to use conventional sequential search positioning. In such a case, CONTROL-M/Tape does not display or log an error message.

When CONTROL-M/Tape passes a Fast Positioning request to the operating system, the operating system examines the request and determines whether Fast Positioning is worthwhile. If the operating system determines that Fast Positioning is not worthwhile (for example, if the requested block ID is near the beginning of the tape), the operating system uses the conventional sequential search mechanism instead. This means that a CONTROL-M/Tape request for Fast Positioning never increases positioning time. It either decreases it or leaves it unchanged.

Because Fast Positioning can dramatically speed up jobs, it is recommended that you include the expression DO FASTPOS=YES in CONTROL-M/Tape rules for all data sets that you write.

IOA Functions

At each intervention point, CONTROL-M/Tape can execute a set of actions that are common to other INCONTROL products. Through these actions (meaning, DO actions specified in CONTROL-M/Tape rules), CONTROL-M/Tape can communicate with other INCONTROL products, trigger events, schedule jobs, and so on.

These actions are:

Table 184 IOA Functions that CONTROL-M/Tape can execute at Intervention Points (part 1 of 2)

Function	Description
SHOUT	Issue a message to operators, TSO users, CICS users, the IOA Log, and other destinations.
CONDITION	Add or delete IOA prerequisite conditions. Prerequisite conditions can trigger the submission of another job under CONTROL-M, a CONTROL-M/Analyzer balancing mission, and so on.
RESOURCE	Modify the quantity of an IOA Quantitative resource.

Table 184 IOA Functions that CONTROL-M/Tape can execute at Intervention Points (part 2 of 2)

Function	Description
FORCEJOB	Force the scheduling of a job under CONTROL-M.
SET	Set the value of an IOA AutoEdit variable.

The intervention points are:

Table 185 Intervention Points where CONTROL-M/Tape can execute IOA Functions

Intervention Point	Description
Check-In	When a volume is checked in using the Online facility or the Automatic Check-In facility.
Mount	When a mount message is issued.
Open	When a data set is opened.
Close	When a data set is closed normally.
Abend	When a data set is closed under abend.
Keep	When a keep message is issued.

IOA Functional Monitor

NOTE



Open, Close or Abend Close apply only for data set creation events.

Keep and Mount can be activated (through ON statements) only upon attributes that are available at keep and mount time. For example, you cannot request DO CONDITION AT KEEP based on the program name, since this information is not available from the Keep message.

The IOA Functional monitor is a started task that runs constantly. It waits for actions (for example, IOA functions such as DO CONDITION and DO SHOUT) that require processing, and processes them. It also accepts requests to be passed to robot tape libraries, and processes them.

IOA functions required by CONTROL-M/Tape in the online and real-time environments are passed to the IOA Functional monitor by the CONTROL-M/Tape Trace file. When an event occurs (for example, volume checked in, data set created) that requires execution of an IOA function, the CONTROL-M/Tape component writes a trace record that describes the needed function.

When the IOA Functional monitor reads the CONTROL-M/Tape Trace file, it executes the requested functions.

The IOA Functional monitor initially passes control of each request to IOA user Exit IOAX038. When control is returned to the IOA Functional monitor, the monitor activates a different task to handle each type of request (for example, DO FORCEJOB, DO SHOUT). Each task can call a specific IOA user exit (for example, Exit IOAX007 for DO CONDITION) to control the handling of the current operation.

When using several INCONTROL environments in conjunction with only one CONTROL-M/Tape environment, it must be decided in which of these INCONTROL environments the IOA Functional monitor is to be brought up. When multiple IOA Functional monitors are used, IOA user Exit IOAX038 can determine which requests is processed under each environment (for example, process requests under the CPU that initiated the request).

For more information about using one or more INCONTROL and CONTROL-M/Tape environments with the IOA Functional monitor, refer to “IOA Functional Monitor” in the *INCONTROL for z/OS Installation Guide*.

Operation Modes

CONTROL-M/Tape can operate in one of three modes: Production, Phased, or Test. The mode mainly affects the actions of the Real-Time environment. The operation mode is determined by the MODE parameter in member CTTARM (global mode) and by the MODE parameter in the rules (rule mode).

NOTE



For information on how to alter the settings for parameters in member CTTARM, see “Performing Post-Installation Tasks” in the *INCONTROL for z/OS Installation Guide*.

Production Mode

When in Production mode, CONTROL-M/Tape controls volume processing in the system. Jobs that violate data integrity abends, invalid volumes are rejected and WTORs (Write To Operator and wait for Reply) are issued to the operator in certain cases.

Phased Mode

Phased mode enables CONTROL-M/Tape to work in parallel with another tape management system. Phased mode is very similar to Production mode. Phased mode cannot be specified in a rule, only in member CTTARM. CONTROL-M/Tape maintains control before and after any other tape management system. Therefore, if CONTROL-M/Tape abends a job or rejects a volume, it is not recorded by another tape management system. Likewise, if another TMS causes a job to abend or reject a volume, it is not recorded by CONTROL-M/Tape.

NOTE



In Phased mode, MVS message IEC507D is not suppressed by CONTROL-M/Tape. It is usually suppressed by most other tape management systems.

Test Mode

In Test mode, CONTROL-M/Tape records information in the Media Database but does not intervene in any way (meaning, no abends, no WTORs, no volume rejects, data sets are not uncataloged when expired). Unexpired data sets are not protected against overwriting in Test mode. Messages are issued as in Production mode. In addition to a global Test mode (set by the expression MODE=TEST in member CTTARM), Test mode can be selectively assigned to certain applications by defining rules. In this way, CONTROL-M/Tape can operate in Production or Phased mode and still operate in Test mode for certain jobs, volumes, data sets, and so on. The first rule that is relevant to a request (meaning, the first matching rule) determines whether that request is handled in Production or Test mode.

NOTE



Global Test mode (in member CTTARM) always overrides the mode in the rule.

Stacking

Stacking is the process by which CONTROL-M/Tape places data sets with similar attributes (for example, retention) together on a volume. Two types of data set stacking can be performed by CONTROL-M/Tape:

- Batch stacking - Handles already existing data sets using the CTTSBD utility that is run in batch mode.

- Dynamic Dataset stacking – Handles newly created data sets during real-time operations.

Batch Stacking

The CTTSBD utility enables you to stack data sets already on tapes at your site. This utility can be used to free scratch tapes, override stacking limitations imposed by your real-time stacking definitions, and organize data sets that existed before your site's tapes were managed by CONTROL-M/Tape.



NOTE

The CTTSBD utility can also be used to perform the unstack operation, which copies each data set from an input volume or volume chain to a separate output volume.

For more information about batch stacking, see the CTTSBD utility in the *INCONTROL for z/OS Utilities Guide*.

Dynamic Dataset Stacking

When a scratch volume is requested for a new data set, CONTROL-M/Tape can automatically direct the data set to an active volume that contains one or more files with attributes similar to the new data set.

This feature is controlled by both the DYNSTK installation parameter, which must appear in the CTTARM installation parameter, and the DO STACK statement, which must appear in the CONTROL-M/Tape rule of the data set.

At the start of a job, CONTROL-M/Tape searches the JCL of the job for a request for a new tape data set to be created on a scratch volume. If such a request is found, CONTROL-M/Tape verifies the following:

- CONTROL-M/Tape is operating in Global PHASED / PROD Mode.

When CONTROL-M/Tape is operating in TEST mode, Dynamic Dataset Stacking is controlled by the STKTEST parameter in the CTTARM member.



NOTE

The CTT Parm member can be refreshed in memory by starting the CTTINIT procedure with the expression `parm='RELOAD,TBLT=PARM'`.

- The matching rule does not specify the expression `RETENTION=EDM` or `MODE=TEST`.
- A matching record for the data set is found in the Stacking Database.
- The name of the data set to be found can be changed by Exit 2.

This check can be overridden when parameter `STKDEFSZ` is specified in member CTT Parm or in a rule.

- The data set is marked as stackable in the Stacking Database.
- The pool name specified in the rule points to an active (defined) pool.

Depending on the results of the check, either of the following occurs:

- If any of these checks fails, message CTT356W is issued followed by a message that identifies the cause of the failure, and stacking is not performed for the data set.
- If all checks succeed, the Media Database is scanned for a suitable volume. The maximum number of volumes that can be scanned is specified in parameter `STKSRCHL` in CTT Parm. Either of the following two results is possible:
 - If the search limit is reached without finding a suitable volume, stacking is not performed, message CTT356W is issued followed by a message that identifies the reason that stacking could not be performed, and a SCRATCH request (mount request for a scratch volume) is issued.
 - If a suitable volume is found, the job's parameters are adjusted to direct the data set onto the selected volume. Instead of issuing a SCRATCH request, the mount message requests the selected volume.

The search for a suitable volume process calls Exit 10 (Find Stackable Volume Exit). This exit can be used to control the search algorithm. For more information regarding Exit 10, refer to "CONTROL-M/Tape Exits" in the Exits chapter of the *INCONTROL for z/OS Administrator Guide*, and to member DOCTX010 in the IOA DOC library.

Each subsequent search for a suitable volume begins from the last volume scanned in the preceding search.

The space required for the new data set is estimated based on the sizes of previous versions of the data set. Previous versions must have the same data set name and must be created by the same job name. This information is kept in the Stacking Database.

For every newly created data set, CONTROL-M/Tape writes a record containing data set attributes (such as block size and block count) in the Trace file. During the New Day procedure, a utility (CTTSTK) reads the Trace file and updates the information in the Stacking Database.

If a data set is recreated, processed with the expression DISP=MOD, or processed in a step with DD statement //NOSTACK, an entry is created in the Stacking Database marking this data set as non-stackable. The volume on which this data set resides is also marked as non-stackable (in the Media Database).

CONTROL-M/Tape maintains the used space (megabytes used) and free space (megabytes remaining) of each volume. Whenever a volume becomes scratch, it is assigned the maximum size, according to its media. This size is specified in the MEDIA statement in member CTTPARM.

Besides having enough space and belonging to the appropriate pool, the selected volume can be forced to meet one or both requirements controlled by parameter STKMODE in member CTTPARM:

- The volume can be forced to have the same vault pattern as the data set (or not have any vault pattern if the data set is not intended for vaulting).
- The last data set on the volume can be forced to have a retention period that is equal to or greater than that of the new data set.

User Exit CTTX002 can be used to change default processing (for example, it can eliminate the job name factor so that any data set with the same name is considered a previous version of the new data set).

Stacking Datasets With Nonspecific Retention

During New Day Processing, the CTTSTK utility reads the Trace file and gathers statistical information about data sets with non-specific retention (meaning, retention types CYCLES, CATALOG and LAST ACCESS). Based on this information, the average life span of each data set of this type is calculated and stored in the Stacking Database (STK).

Stacking of data sets with non-specific retention is performed according to installation parameter STKMODE. If STKMODE is set to R or A, the Dynamic Stacking facility calculates the expected retention date of the data set based on average data set life span. The data set is then stacked as if a specific retention was specified for it (meaning, it can be stacked on volumes that contain data sets with a specific retention type).

If STKMODE is set to S, the average data set life span is not considered and the stacking algorithm is not changed.

If a stacking statistics record is not found for a data set, that data set is treated as having an unknown retention, and the data set cannot be stacked unless installation parameter STKMODE is set to S.

NOTE

Prior to version 5.1.4, any data set with a nonspecific retention type was not eligible for stacking.

For information about the calculated life span of a data set, see the CTTSTK utility in the *INCONTROL for z/OS Utilities Guide*.

Stacking Conditions

CONTROL-M/Tape stacks data sets only if the following conditions are met:

- Parameter DYNSTK in member CTTPARM is set to YES and CONTROL-M/Tape is operating in Production mode or Phased mode.
- Stacking can be activated when CONTROL-M/Tape is operating in TEST mode by setting STKTEST to Y in the CTTPARM member.
- A SCRATCH (meaning, nonspecific) request for a new data set is issued and the volume is accessed as Standard Label (SL).
- The data set is to be cataloged after creation with the expression DISP=(NEW,CATLG). Otherwise, it is assumed that the user probably depends on the data set being first on the volume.
- For non-SMS data sets, the UNIT parameter in the JCL is one of the units specified in parameter STKUNIT in member CTTPARM.
- For SMS-managed data sets, YES is specified for CONTROL-M/Tape installation parameter SMSINTR, and the SMS Storage Group type of the data set is TAPE.
- There is no //NOSTACK (stacking bypass) DD statement in the JCL.
- The mount request is matched by a rule that specifies the expression DO STACK=YES. The rule can match the data set name, job name, program name, and so on. The VOLSER is not a criterion in this case.
- The rule specifies the expression MODE=PROD. If the rule specifies the expression MODE=TEST, CONTROL-M/Tape does not perform stacking, even if the CTTPARM member includes the expression TESTRULE=NO.

- An entry for this data set and job name exists in the Stacking Database, so that CONTROL-M/Tape is able to estimate the size of the new data set. This value can be overridden when parameter STKDEFSZ is specified in member CTTTPARM, or by a DO STKDEFSZ statement in a CONTROL-M/Tape rule.

NOTE



The Stacking Database is updated as part of the New Day procedure.

- Either the matching rule specifies a defined pool name or it does not specify any pool name.
- An eligible volume from the same pool is found that is no more than x% full after stacking. This percentage is determined by the MEDIA statement in member CTTTPARM (parameter STKPCNT).
- Parameter STKMODE in member CTTTPARM specifies:
 - S (Simple), and neither the volume nor the new data set is to be vaulted.
 - V (Vaulting), and the vault pattern of the volume is the same as that of the new data set.
 - R (Retention), and the retention of the last data set on the volume is equal to or greater than that of the new data set.
 - A (All), and the conditions for both Retention and Vaulting are met.
- The volume is not marked as External, Out-of-Lib, or Vaulted. The data set is not EDM controlled.
- The DD statement does not specify the expression VOL=REF and is not the target of this expression in another DD statement.
- The value for volume-count (the fourth subparameter of JCL parameter VOLUME) is either 1, or blank (meaning, no specification).
- The DD statement does not use the expression UNIT=AFF.
- The file sequence number is either specified as 1, or has the default of 1.
- The DD statement does not specify the expression EXPT=98000.
- The volume contains data sets that are either members of the same stacking group or are compatible with the stacking group of the data set to be stacked.

- Stacking is not denied by a DO STKRULE statement in a CONTROL-M/Tape rule.
- The volume does not already contain the maximum number of data sets specified in either installation parameter STKMXMLBL or a DO STKMXMLBL statement in a CONTROL-M/Tape rule.
- The volume sequence number does not exceed the limit defined by a DO STKMXXVOL statement.
- The volume’s stacking group matches the stacking group of the data set, or a stacking group is *ANY.
- The data set is allocated in a DD statement in a job’s JCL. CONTROL-M/Tape does not stack data sets that are allocated dynamically (using SVC 99).

Retention Management

CONTROL-M/Tape supports a variety of expiration types. These are listed in the table below:

Table 186 CONTROL-M/Tape Expiration Types

Expiration Type	Sample Value	Description
Specific date	10/05/93	Expires on the date indicated.
Cycle	05	Expires when five cycles (versions) of the data set exist.
EDM		External Data Manager decides when the volume is to expire.
Catalog		Data set expires when its entry no longer exists in the operating system catalog.
Last access	30	Data set expires when it has not been accessed for 30 days.
Days	30	Data set expires when 30 days have passed since the creation date.
Permanent		Data set never expires.
Return from Vault		Data set expires after the volume’s specified vault pattern is completed (meaning, the volume has returned from the vault).
JCL EXPDT	93310	Data set expires according to the JCL EXPDT/RETPD field.

The retention period of a data set is the combination of up to three expiration dates, with a logical relation between them (And/Or). For example:

DO RETENTION = CYCLES	0003	PREFIX N (Y/N)	And/Or	A
JCL EXPDT			And/Or	
DO				



NOTE

For a more detailed description of retention cycle definitions, refer to parameter CYCLECNT in the *INCONTROL for z/OS Installation Guide*.

The above rule determines that the data set expires when three cycles of the data set exist and the JCL EXPDT/RETPD/DATACLAS date has been reached.

The JCL EXPDT parameter can specify a special value (for example, 99365), thus causing the data set to be permanently retained.

RETPD and EXPDT JCL Parameters

Table 187 JCL Retention Parameters (part 1 of 2)

Parameter	Description
CONTROL-M/Tape treats the following JCL retention parameters in the standard way:	
RETPD=0	For temporary data sets that are scratched after use.
RETPD=dddd	Standard retention period (<i>dddd</i> is number of days).
EXPDT=yyddd	Standard expiration date (<i>yyddd</i> is the Julian date).
EXPDT=yyyy/ddd	Standard expiration date (<i>yyy/ddd</i> is the Julian date).
EXPDT=99365	Permanent retention.
EXPDT=99366	Permanent retention.
In addition, CONTROL-M/Tape treats the following EXPDT value in a special way:	
EXPDT=98000	Volume is not managed by CONTROL-M/Tape. CONTROL-M/Tape processing is bypassed.
EXPDT=99000	Retention is controlled by the operating system catalog. The data set is scratched when there is no longer an entry in the catalog.
If member CTTARM in the IOA PARM library includes EXPDTYPE=CA1 to request compatibility with the CA-1 tape management system, CONTROL-M/Tape treats the following EXPDT values in a special way:	
EXPDT=99ccc	Cycle control. <i>ccc</i> is the number of cycles retained, independently of the operating system catalog. An installation parameter ^a defines a cycle (for example, each new generation (version) of the data set).
EXPDT=98ddd	The data set is scratched if it is not used during a period of <i>ddd</i> days. <i>ddd</i> is the number of days since last access.
EXPDT=90ccc	Catalog and DAYs control. <i>ddd</i> is the number of days since creation. The dataset expires only after it is removed from the catalog and <i>ccc</i> days passed since its creation
If the CTTARM member includes the expression EXPDTYPE=TLMS to request compatibility with the CA-TLMS tape management system, CONTROL-M/Tape treats the following EXPDT values in a special way:	

Table 187 JCL Retention Parameters (part 2 of 2)

Parameter	Description
EXPDT=990cc	Cycle control. <i>cc</i> is the number of cycles retained, independently of the operating system catalog. An installation parameter defines a cycle. For example, each new generation (version) of the data set.
EXPDT=991dd	Catalog and date control. <i>dd</i> is the number of days since creation.
EXPDT=992dd	Days since creation. <i>dd</i> is the number of days.
EXPDT=98ddd	The data set is scratched if it is not used during a period of <i>ddd</i> days. <i>ddd</i> is the number of days since last access.

^a For a more detailed description, see the CYCLECNT parameter in the *INCONTROL for z/OS Installation Guide*.

Turning Off Special Treatment of EXPDT Values

To turn off special treatment of all the EXPDT values described above (except for the expression EXPDT=98000), put a special DD DUMMY statement in the JCL. The DDNAME of this special DD statement is the value of the EXPDTDDN parameter in member CTTPARM.

For example, if member CTTPARM includes the expression EXPDTDDN=DD2000, the special DD DUMMY statement would be

```
//DD2000 DD DUMMY
```

When the JCL includes this special DD statement, CONTROL-M/Tape treats all EXPDT values except 98000 as standard dates, without any of the special meanings described earlier. The expression EXPDT=98000 retains its special meaning.

Retention Algorithm

Whenever a new data set is created, the retention specification for that new data set is taken from one of the following sources:

- retention attributes: JCL parameters EXPDT, RETPD, or DATACLAS, and, if the SMS Interface is active, relevant Management Class attributes
- the rule table currently in memory
- \$DEFAULT rule
- installation default

The algorithm by which the retention specification is selected is as follows:

- If a retention specification is found in either the retention attributes or in the current rule table, but not both, that retention specification is used.
- If a retention specification is found in both locations, the retention selected depends on the OVERJCL installation parameter:
 - If OVERJCL is set to Y, the retention from the current rule table is used.
 - If OVERJCL is set to N, the retention attributes are used.
- If a retention specification is not found in either the retention attributes or the current rule table, the retention in rule \$DEFAULT is used. If rule \$DEFAULT does not exist, the installation default is used.

NOTE



To maintain CA-TLMS compatibility, if the JCL EXPDT / RETPD / DATACLAS parameter contains a non-keyword date, the \$DEFAULT rule overrides the JCL value. The JCL value is considered only if the \$DEFAULT rule specifies JCL retention.

Note that when processing abend retention, the retention attributes are not considered.

Retention parameters are taken from the current rule table.

- If the table does not have retention specifications, abend retention is taken from \$DEFAULT.
- If \$DEFAULT does not have retention parameters, the installation default is used.

Retention Update

Retention is always set or updated when the data set is first introduced to the Media Database by Create, Recreate, or Dynamic Definition.

The RTNUPD parameter in the CTT Parm member can be used to update the retention in other situations, depending on the type of access to the data set (for example, DISP=MOD access). For more information, see the description of parameter RTNUPD in the *INCONTROL for z/OS Installation Guide*.

Volume Retention

Because the volume retention period is the latest retention period of any of its data sets, changes made to the data sets in a volume might change volume retention information. Volume retention information consists of the following:

Table 188 Volume Retention Information

Item	Description
Volume expiration type	Expiration type of the data set that is to be kept for the longest period of time (meaning, due to expire last).
Volume expiration date	Expiration date of the data set on the volume due to expire last. If the volume contains a data set with a non-date expiration type (for example, catalog control), the volume's expiration date is indefinite (meaning, not set).
Expiration data set number	File sequence number of the data set due to expire last.
Last data set expiration date and type	Expiration date and type of the last data set physically on the volume. (This field is used for choosing matching volumes for stacking.)

Retention Processing

Actual expiration of data sets and volumes is performed by the CTTRTM utility, which is run on a daily basis.

CTTRTM examines the retention period of all data sets listed in the Media Database. In general, when the retention period of a data set has been exceeded, the data set status in the data set record is set to "scratch" and the corresponding volume record is updated accordingly. A volume does not become scratch until all its data sets are expired.

If the RTNTYPE installation parameter is set to VOL in the CTTARM parameter, a data set is not scratched until all the data sets on the same volume have expired. In this case, all the data sets on a multifile volume are scratched at the same time, when the last data set expires. If RTNTYPE is set to DSN, each data set is scratched according to its own retention period, even if other active data sets exist on the volume.

If the RTNTYPE installation parameter is set to GROUP in the CTTARM parameter, a data set is not scratched until all the data sets in the group of volumes have expired. In this case, all the data sets on a multivolume group are scratched at the same time, when the last data set expires. If RTNTYPE is set to DSN, each data set is scratched according to its own retention period, even if other active data sets exist on the volume.

When a data set is expired by CONTROL-M/Tape, if the data set is cataloged in the same volume, it is uncataloged from the operating system catalog. A vaulted volume is not scratched until it has completed its vault pattern and returns to the Active library (MAINLIB).

In addition to utility CTTTRTM, volumes and data sets can be scratched through the Online facility (TI screen), the CTTMUP utility, or the CTTAPI. For an example of scratching using CTTAPI, see the CTTVEXP member in the IOA SAMPLE library.

From the Online facility, volumes and data sets can be expired using the Expire command in the Inquire/Update screen. If an Immediate scratch is requested, the volume and all the data sets residing on it expire immediately. If not, they are marked as Pending Scratch and are expired by the next run of utility CTTTRTM.

Vault Management

When a data set is closed, the rule table in memory is searched to see if a vault pattern was specified for this data set. If found, this vault pattern is copied to the volume record.

The vault pattern specifies the different vaults in which the volume is to be stored, and how long the volume is kept at each vault (meaning, retention criteria for each vault). The retention criteria for each vault are the same as general retention specifications. Vault retention criteria can be composed of up to three expiration dates, each of a different type (specific date, cycles, and so on).

One DO VAULT statement can be specified per rule, but an unlimited number of vaults can be specified in the DO VAULT statement.

Vault locations, entry dates, exit dates, and retention criteria are recorded in the Media Database. The current location of a volume is updated whenever the volume is moved.

A volume residing in a vault cannot be scratched. When a volume is first created or checked in (from external sources), the volume's first location is the active library (MAINLIB). When a volume's vault retention in any location expires, the volume is moved to the next vault location specified in the Media Database. When no additional vault locations are specified for a volume, the volume returns to MAINLIB.

Since vaulting can only be performed on a volume and not on individual data sets, only one data set can determine the vault pattern of a volume. Installation parameter VLTBYDS1 determines which data set sets the vault pattern for the volume. If parameter VLTBYDS1 is set to Y (Yes) in member CTTPARM, the first data set on a

volume determines the vaulting of the volume. If parameter VLTBYDS1 is set to N (No), the first data set that has vault criteria (regardless of its position on the volume) determines the vaulting of the volume, provided there is no previous vault pattern for this volume.

The same vault pattern is assigned to all volumes in a multi-volume chain.

Only one data set in a volume or multi-volume chain can determine the vault pattern for the volumes. The VLTBYDS1 parameter in the CTTPARM member determines the data set whose vault pattern takes effect for the multi-volume chain.

Example

Assume the following:

- Data set A resides on VOL1 and VOL2.
- Data set B resides on VOL2 (label 2) and VOL3.
- Data set A does not need to be vaulted, and data set B requires vaulting in vault REMOTE.

In this case

- If VLTBYDS1 is set to Y (Yes), volumes VOL1, VOL2 and VOL3 are not vaulted.
- If VLTBYDS1 is set to N (No), the three volumes are vaulted in REMOTE.

NOTE

To be compatible with other tape management systems, set VLTBYDS1 to Y.



The decision of when and between which vaults to move a volume is managed by CONTRL-T utility CTTVTM.

NOTE

To maintain CA-TLMS compatibility, if a vault pattern is specified in the \$DEFAULT rule, the vault pattern is ignored if the JCL EXPDT parameter contains a keyword date (00xxx/01xxx). To specify the vault pattern in a different default rule, include the expression ON DATASET=* in a rule whose name is not \$DEFAULT.



Vault Locations

Vault locations are defined using the Online facility and stored in a special member in the definitions library. A vault definition contains the vault name, vault attributes (either local or remote), some documentary data, and details about the capacity and organization of the vault.

During the Initialization process, vault definitions are loaded into memory and become part of the Real-Time environment. These definitions can be changed and reloaded without shutting down CONTROL-M/Tape.

When the Vault Management facility is run, volumes are moved to and from vaults. Each volume is assigned an empty slot in its new vault and its old slot becomes free. Data about the current capacity of a vault is kept and updated in special records (vault records) within the Media Database.

If vault capacity is not specified when defining a vault, CONTROL-M/Tape does not manage slots in that location.

When a vault definition is modified (for example, by screen TV), the modification is stored in the Vault Definition member (for example, \$\$VAULT) but does not affect the vaulting of volumes until after the next run of utility CTTVTM.

Vaulting By Boxes

In addition to handling volumes on an individual basis, Vault Management can handle “boxes” of volumes. Volumes are gathered into boxes, and boxes are moved to different locations.

Boxes can only be moved to the locations specified for the volumes they contain. Therefore, all volumes in a box must have the same vault pattern. The vault pattern must contain only date related retention criteria (VAULT DAYS and DAYS SINCE CREATE). Boxed volumes cannot contain non-date retention criteria (for example, CYCLE, MVS CATALOG). A name (unique 6-character identifier) and capacity (size) is defined for each box. The number of boxes that can be defined, as well as the size of a box, are unlimited. A minimum number of volumes required in a box (BOXLIMIT) can be defined.

All boxes are defined in the vault named “MAINLIB” and are assumed to be empty. If MAINLIB is one of the destinations of the box in its vault pattern, use a vault name other than MAINLIB as an alias for the main library, and define the box slot capacity under that alias vault.

For information regarding the defining of boxes, refer to “[Vault Definition Facility](#)” on page 136.

When volumes are to be moved from MAINLIB, they are placed in an appropriate box and the box is moved to the appropriate location.

When a vaulted volume needs to be processed in MAINLIB, the complete box (with all its volumes) is recalled from its current location. After the volume is processed, the box returns to its original vault location.

No volumes are added or removed from a box until the box completes the vault cycle and returns to MAINLIB. At that point, the box is assumed to be empty again.

To request vaulting by boxes, the user must specify the expression BY BOX=Y in the DO VAULT statement in the rule definition. This allows the volume using that rule definition to be placed in a box. The volume is placed in a box according to other conditions such as the number of free boxes.

When utility CTTVTM is processing these volumes, it sorts them according to media type and vault pattern. It then looks for an empty box that supports the media type and places the volumes in the box.

A set of volumes that are vaulted by box, but contains fewer volumes than specified by the BOXLIMIT parameter is vaulted without a box using the regular volume vaulting process (in a slot). For more information, see utility CTTVTM in the *INCONTROL for z/OS Utilities Guide*.

When CTTVTM must move a volume that is vaulted in a box, the whole box is moved to the next location, including all the volumes contained in that box. When there is no next entry, or when the next entry is MAINLIB and is also the last entry in the vault pattern, all volumes are removed from the box and the box is marked EMPTY.

Unless specifically requested, utility CTTVTM does not reload the box definition on each invocation. To add, delete, or update box definitions, CTTVTM must be invoked in a special mode, by specifying parameter BOXBLD.

A user who is using box management for the first time should first run utility CTTVTM with parameter BOXBLD, so that the utility defines the boxes in the Media Database.

Utility CTTVTM produces special reports detailing the movement of boxes. The reports indicate that volumes are placed in specified boxes, and that boxes are moved between the vault locations.

For more information, see utility CTTVTM in the *INCONTROL for z/OS Utilities Guide*.

CONTROL-M/Tape to DFSMS Interface

The CONTROL-M/Tape to DFSMS interface enables you to:

- Determine the expiration date of a data set on the tape according to DFSMS Management Class definitions.
- Use Management Class as a selection parameter in rule definitions. For more information, see the description of ON MGMTCLAS in [“ON Statement: Selection Parameter” on page 374](#).

For information regarding the activation of the CONTROL-M/Tape interface to DFSMS, see the discussion on DFSMS support in the CONTROL-M/Tape DFSMS interface chapter of the CONTROL-M/Tape Implementation Guide.

Retention by Management Class

Real-Time Processing

If the CONTROL-M/Tape to DFSMS interface is active, when a data set is created on tape, the DFSMS Management Class of the data set (if it exists) is recorded in the CONTROL-M/Tape Media Database. Depending on the value of installation parameter OVERJCL, the retention is set either according to rule definitions defined for the data set or according to the retention attributes, described in the next topic, [“Retention Management Utility \(CTTRTM\) Processing,”](#) and in [“Retention Algorithm” on page 440](#).

Retention Management Utility (CTTRTM) Processing

During the execution of retention management utility CTTRTM, if data set retention is performed according to the retention attributes, the DFSMS Construct Access Services is invoked to obtain the Management Class definition.

DFSMS Management Class definition attributes that are relevant for the CONTROL-M/Tape retention processing are:

- Retention Limit
- Expiration attributes (Expire After Days Non-Usage, Expire After Date/Days)
- # GDG Elements On Primary

The Retention Limit and Expiration attributes are combined with EXPDT/RETPD values (if issued) in the JCL to form a retention criterion. These values are combined in the manner described in “Defining Management Class Attributes” in the *DFSMSdfp Storage Administration Reference Manual*.

Attribute “# GDG Elements On Primary” specifies the number of data set cycles that CONTROL-M/Tape should retain. If both Expiration Attributes and attribute # GDG Elements On Primary are defined for the same Management Class, a tape data set with this class is expired only if the Management Class attributes, the number of cycles, and JCL EXPDT/RETPD criteria, are satisfied.

The result of merging the retention criteria is referred to as retention attributes, described in the topic “[Retention Algorithm](#)” on page 440.

When using Management Class to set a tape data set expiration date, the expiration of the data set is flexible. Each time utility CTTRTM is executed, the Management Class attributes are extracted. Therefore, when changing the Management Class attributes under DFSMS, the expiration date of each data set that has this Management Class in the CONTROL-M/Tape Media Database is also changed.

Pool Assignment by Management Class

As previously described in “Pool Allocation” of this chapter, different pools can be assigned to different jobs based on selection criteria. When the CONTROL-M/Tape to DFSMS interface is active, a Management Class can be used as a selection criterion. For more information, see ON MGMTCLAS in “[ON Statement: Selection Parameter](#)” on page 374.

DFSMS Class Definitions

It may be desirable to define special Storage Classes and Management Classes for tape data sets. As stated earlier in “Retention by Management Class,” few Management Class attributes and no Storage attributes are relevant to CONTROL-M/Tape. The reason for defining special Storage Classes is that DFSMS activates the Management Class ACS routine only if a Storage Class is assigned to the data set.

Stacking of DFSMS-Controlled Data Sets

DFSMS-controlled data sets are handled by the Dynamic Dataset Stacking facility only if the following are true:

- YES is specified for CONTROL-M/Tape installation parameter SMSINTR.
- The data set is controlled by DFSMS.
- The SMS Storage Group type of the data set is TAPE.

NOTE

CONTROL-M/Tape installation parameter STKUNIT is ignored for these data sets.



Automatic Class Selection (ACS) Routine Adjustments

To extract the Management Class for a tape data set, CONTROL-M/Tape invokes the DFSMS Automatic Class Selection (ACS) routines, usually several times. ACS parameter &ACSENVIR can be used to distinguish between CONTROL-M/Tape activation's of the ACS routines and other activation's (probably DFSMS) of these routines. The value of &ACSENVIR also helps distinguish between the different events in that CONTROL-M/Tape invokes the ACS routines.

Since DFSMS activates the Management Class (MC) ACS routine only if a Storage Class (SC) is assigned for the data set, adjustments are made to both the Storage Class ACS routine and the Management Class ACS routine. The Storage Class ACS routine should assign a Storage Class for the tape data set, and the Management Class ACS routine should assign the tape data set a Management Class.

Invoking Automatic Class Selection Routines

CONTROL-M/Tape invokes DFSMS ACS routines for each of the events in the table below. Note the following points:

1. The value of &ACSENVIR depends on the event.
2. Since different Management Classes can be assigned to the same data set in different activations of the ACS routines, different CONTROL-M/Tape rule definitions might be applied for the same data set in different events.
3. When a Management Class (MGMTCLAS) selection criterion is used in combination with other selection criteria (for example, JOBNAM), the rule is applied only if all criteria are satisfied.

Table 189 Events for which CONTROL-M/Tape Invokes DFSMS ACS Routines

Event	&ACSENVIR	Management Class Usage
Mount Scratch	CTTMNTV	Assign a scratch pool. Perform IOA functions based on MGMTCLAS selection criterion, and verify that the mounted tape belongs to the desired pool.
Open for Output	CTTOPEN	Extract a Management Class to be recorded for the data set in the CONTROL-M/Tape Media Database, and used as a selection criterion in rule definitions (for example, set a vault pattern according to MGMTCLAS).
Dynamic Dataset Stacking	CTTMNTV	Based on the MGMTCLAS selection criterion, assign a pool and determine whether to stack the data set by setting STACK to Y or N).
Manual Dataset additions to the CONTROL-M/Tape Media Database (for example, utility CTTMUP, Check-In screen)	CTTDSADD	Extract a Management Class to be recorded for the data set being added manually to the CONTROL-M/Tape Media Database, and perform IOA functions based on the MGMTCLAS selection criteria.

The following table lists which ACS parameters are available. Environments for which these parameters are available are marked by an X (or by other relevant information). The environments indicate the following events under CONTROL-M/Tape:

- CTTMNTV—A mount request is issued.
- CTTOPEN—A new data set is opened.
- CTTDSADD—A volume is checked in by the External Volume Check-In screen (TC).

Table 190 Available ACS Parameters

Parameter &ACSENVIR	Environments		
	CTTMNTV	CTTOPEN	CTTDSADD
&PGM	X	X,	
&DSN	X	X	X
&ACCT_JOB	X	X	
&JOB	X	X	
&DD		X	
&UNIT	X	X	
&LABEL		X	X
&ALLVOL(1)	For specific mount requests	X	X
&FILENUM		X	X

Editing commands are typed directly onto these underscores.

Incorrectly specified line editing commands can be corrected by typing over them correctly. Line editing commands can be deleted by blanking them out or by specifying the RESET command in the COMMAND field.

Specified line editing commands are processed when **Enter** is pressed.

CONTROL-M/Tape performs automatic syntax checking to ensure that the definition is still syntactically correct after editing. If an edit invalidates the definition, a message is displayed at the top of the screen and the edit is not performed. For guidelines and recommendations for editing definitions, see “Maintaining Valid Definitions” later in this appendix.

All operations available in a definition screen can be performed while in the Edit environment (for example, parameter values can be changed, the definition screen may be saved, and the screen exited).

To exit the Edit environment, re-type EDIT in the COMMAND field and press **Enter**. Line editing command fields are removed from the display.

Line editing commands can be performed on the following:

Table 191 Subjects of Line Editing Commands

Subject	Description
Single Lines	One single line on the screen. Example: <ul style="list-style-type: none">■ Single line DO statements (such as DO LABEL).
Logical Lines	All parameter lines for a specific statement, including its subparameters and continuation lines. Example: <ul style="list-style-type: none">■ DO CONDITION, whose subparameters span several lines.
Logical Blocks	Functional group of parameter lines. Example: <ul style="list-style-type: none">■ ON block and its parameter lines.
Multiple Lines	User-specified group of parameter lines. Example: <ul style="list-style-type: none">■ Series of DO statements.
Separator Lines	A line of equal signs that separates blocks on the definition screen. Separator lines are not processed.

Line Editing Commands

The following types of line editing commands exist in the Edit environment.

Table 192 Line Editing Commands - Delete Commands

Command	Description
DS	Delete a single line.
DL	Delete a logical line.
DB	Delete a logical block or sub-block.
DD	Delete lines between two DD specifications.
D	Delete a line. CONTROL-M/Tape determines whether to delete a single or logical line based on the line type.

Table 193 Line Editing Commands - Copy Commands

Command	Description
CS	Copy a single line.
CL	Copy a logical line.
CB	Copy a logical block or sub-block.
CC	Copy lines between two CC specifications.
C	Copy a line. CONTROL-M/Tape product determines whether to copy a single or logical line based on the line type.
Copy commands are used in conjunction with Location commands. The lines and blocks are placed at the position indicated by Location command A or B (described below).	

Table 194 Line Editing Commands - Move Commands

Command	Description
MS	Move a single line.
ML	Move a logical line.
MB	Move a logical block or sub-block.
MM	Move lines between two MM specifications.
M	Moves a line. CONTROL-M/Tape determines whether to move a single or logical line based on line type.
Move commands are used in conjunction with Location commands. The lines and blocks are placed at the position indicated by Location command A or B (described below).	

Table 195 Line Editing Commands - Repeat Commands

Command	Description
RS	Repeat a single line.
RL	Repeat a logical line.
RB	Repeat a logical block or sub-block.
RR	Repeat lines between two RR specifications.
R	Repeat a line. CONTROL-M/Tape determines whether to repeat a single or logical line based on line type.
The repeated lines and blocks are placed immediately after the lines and blocks marked with the command.	

Table 196 Line Editing Commands - Insert Command

Command	Description
I	Inserts a new logical line or block after the logical line or block marked with an I.

Table 197 Line Editing Commands - Location Commands

Command	Description
Indication of the position where lines or blocks are placed.	
A (After)	Indicates that lines or blocks are placed after the line marked with an A.
B (Before)	Indicates that lines or blocks are placed before the line marked with a B.
Location commands A and B are used in conjunction with Copy (C, CS, CL, CC, CB), and Move (M, MS, ML, MM, MB) commands.	

Maintaining Valid Definitions

Since definitions must be syntactically correct at all times, consider the following issues when specifying line editing commands:

- The result of a line editing command is dependent on the line on which the command is specified. For example, the D command deletes either a single line or a logical line, based on the line type.
- Logical lines form a unit and must not be separated.

When a logical command is specified within a logical line (that is, on a subparameter line or an additional parameter line), the specified operation is performed on the entire logical line.

- Block commands are specified on the main lines of the block.

For example, to delete an ON block, specify the DB (Delete Block) command on the ON line.

- A separator line must exist between blocks and cannot be deleted.
- Blank parameter lines are added automatically by CONTROL-M/Tape, to allow the user to specify additional parameters, and cannot be deleted.
- It is recommended that, wherever possible, commands D, C, R, and M be used for editing (instead of DS, DL, CS, CL, RS, RL, MS, and ML) because these commands automatically retain the logical structure of the definition.

Examples

Example 1

Repeat a DO block (that is modified later) in the Rule Definition screen

Figure 220 Example - Repeating A DO Block - Before

RULE: DBBKP1 LIB CTT.PROD.RULES				TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+					
___	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
___	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y (Y/N)	
___	DESCRIPTION				
___	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
___	ON DATASET	= BKP.DB*			And/Or/Not
=====					
___	DO POOL	= DATABASE-BKP			
___	DO RETENTION	= DAYS	0060		And/Or
___	DO VAULT	= MAINLIB		BY BOX (Y/N)	
___	UNTIL	DAYS	0010		And/Or
R_	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	=			
___	DO SHOUT	= TO OPER	URGENCY R		
___	MESSAGE	END OF DATABASE BACKUP			
___		AT	CLOSE		
___	DO				
=====					
D O O P T I O N S					
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					10.00.27

The DO block has been repeated.

Figure 221 Example - Repeating A DO Block - After

```

RULE: DBBKP1      LIB CTT.PROD.RULES                                TABLE: RULE2
COMMAND ===>                                           SCROLL===> CRSR
+-----+
___ RULE NAME      DBBKP1      GROUP DATABASE-BACKUP      MODE PROD (Prod/Test)
___ OWNER          M09A      SEQUENCE PRIORITY      CONTINUE SEARCH Y      (Y/N)
___ DESCRIPTION
___ DOCMEM         DBBKP1      DOCLIB CTT.PROD.DOC
=====
___ ON DATASET     = BKP.DB*                                           And/Or/Not
=====
___ DO POOL        = DATABASE-BKP
___ DO RETENTION   = DAYS              0060                               And/Or
___ DO VAULT       = MAINLIB              BY BOX      (Y/N)
___   UNTIL        DAYS              0010                               And/Or
___   VAULT         = VAULT2
___   UNTIL        VAULT DAYS          0050                               And/Or
___   VAULT         = VAULT2
___   UNTIL        VAULT DAYS          0050                               And/Or
___   VAULT         =
___ DO SHOUT       = TO OPER              URGENCY R
___ MESSAGE        END OF DATABASE BACKUP
___               AT CLOSE
___ DO
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT      10.02.12

```

Example 2

Repeat selected DO statements in the Rule Definition screen.

Figure 222 Example - Repeating A DO Statement - Before

RULE: DBBKP1		LIB CTT.PROD.RULES		TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+					
___	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
___	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y	(Y/N)
___	DESCRIPTION				
___	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
___	ON DATASET	= BKP.DB*			And/Or/Not
=====					
___	DO POOL	= DATABASE-BKP			
___	DO RETENTION	= DAYS	0060		And/Or
___	DO VAULT	= MAINLIB		BY BOX (Y/N)	
___	UNTIL	DAYS	0010		And/Or
RR	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT3			
RR	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	=			
___	DO SHOUT	= TO OPER	URGENCY	R	
___	MESSAGE	END OF DATABASE BACKUP			
___	AT	CLOSE			
___	DO				
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					10.02.12

The specified DO statements have been repeated.

Figure 223 Example - Repeating A DO Statement - After

RULE: DBBKP1		LIB CTT.PROD.RULES		TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+					
___	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
___	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y	(Y/N)
___	DESCRIPTION				
___	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
___	ON DATASET	= BKP.DB*			And/Or/Not
=====					
___	DO POOL	= DATABASE-BKP			
___	DO RETENTION	= DAYS	0060		And/Or
___	DO VAULT	= MAINLIB		BY BOX (Y/N)	
___	UNTIL	DAYS	0010		And/Or
___	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT3			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT3			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	=			
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					10.03.47

Example 3

Delete an unnecessary DO block from the Rule Definition screen.

Figure 224 Example - Deleting A DO Block - Before

RULE: DBBKP1 LIB CTT.PROD.RULES				TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+-----+-----+-----+-----+-----+					
___	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
___	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y	(Y/N)
___	DESCRIPTION				
___	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
___	ON DATASET	= BKP.DB*	And/Or/Not		
=====					
___	DO POOL	= DATABASE-BKP			
___	DO RETENTION	= DAYS	0060		And/Or
___	DO VAULT	= MAINLIB		BY BOX (Y/N)	
___	UNTIL	DAYS	0010		And/Or
___	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT3			
___	UNTIL	VAULT DAYS	0050		And/Or
D_	VAULT	= VAULT4			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT5			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	=			
FILL IN RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					10.03.47

The unnecessary DO block has been deleted.

Figure 225 Example - Deleting A DO Block - After

LIB CTT.PROD.RULES				TABLE: RULE2	
COMMAND ==>				SCROLL==> CRSR	
+-----+-----+-----+-----+-----+-----+					
___	RULE NAME	DBBKP1	GROUP DATABASE-BACKUP	MODE PROD (Prod/Test)	
___	OWNER	M09A	SEQUENCE PRIORITY	CONTINUE SEARCH Y (Y/N)	
___	DESCRIPTION				
___	DOCMEM	DBBKP1	DOCLIB CTT.PROD.DOC		
=====					
___	ON DATASET	= BKP.DB*	And/Or/Not		
=====					
___	DO POOL	= DATABASE-BKP			
___	DO RETENTION	= DAYS	0060		And/Or
___	DO VAULT	= MAINLIB		BY BOX (Y/N)	
___	UNTIL	DAYS	0010		And/Or
___	VAULT	= VAULT2			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT3			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	= VAULT5			
___	UNTIL	VAULT DAYS	0050		And/Or
___	VAULT	=			
___	DO SHOUT	= TO OPER	URGENCY R		
___	MESSAGE	END OF DATABASE BACKUP			
FILL IN RULE: DBBKP1 RULE DEFINITION. CMDS: EDIT, SHPF, DOC, SCHED, DOOPT, ONOPT					
10.05.15					

Example 4

Move a volume specification in the Pool Definition screen, so that the list is alphabetized.

Figure 226 Example - Moving A Volume Specification - Before

```
----- POOL DEPT1-POOL                                TABLE  $$POOL  -(TP.S)
COMMAND ==>                                           SCROLL==> CRSR
+-----+
___ POOL NAME    DEPT1-POOL                                OWNER DP1
___ DESCRIPTION  SCRATCH POOL FOR DEPARTMENT #1
___ DESCRIPTION
=====
___ VOLUMES      FROM  AP1001      TO  AP1999
A_              FROM  BP1001      TO  BP1999
___              FROM  FP1001      TO  FP1999
___              FROM  GP1001      TO  GP1999
M_              FROM  DP1001      TO  DP1999
___              FROM
===== >>>>>>>>>>>>>>>> END OF POOL DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====

FILL IN POOL DEFINITION. CMDS: EDIT, SHPF                                     10.10.51
```

The volume specification has been moved.

Figure 227 Example - Moving A Volume Specification - After

```
----- POOL DEPT1-POOL                                TABLE  $$POOL  (TP.S)
COMMAND ==>                                           SCROLL==> CRSR
+-----+
___ POOL NAME    DEPT1-POOL                                OWNER DP1
___ DESCRIPTION  SCRATCH POOL FOR DEPARTMENT #1
___ DESCRIPTION
=====
___ VOLUMES      FROM  AP1001      TO  AP1999
___              FROM  BP1001      TO  BP1999
___              FROM  DP1001      TO  DP1999
___              FROM  FP1001      TO  FP1999
___              FROM  GP1001      TO  GP1999
___              FROM
===== >>>>>>>>>>>>>>>> END OF POOL DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====

FILL IN POOL DEFINITION. CMDS: EDIT, SHPF                                     10.17.25
```

Example 5

Copy a line in the Pool Definition screen.

Figure 228 Example - Copying A Line - Before

```

----- POOL DEPT1-POOL                                TABLE $$POOL--(TP.S)
COMMAND ==>                                           SCROLL==> CRSR
+-----+
___ POOL NAME    DEPT1-POOL                                OWNER DP1
C_ DESCRIPTION *****
A_ DESCRIPTION * SCRATCH POOL FOR DEPARTMENT #1 *
___ DESCRIPTION
___ DESCRIPTION
=====
___ VOLUMES      FROM  AP1001    TO  AP1999
___              FROM  BP1001    TO  BP1999
___              FROM  DP1001    TO  DP1999
___              FROM  FP1001    TO  FP1999
___              FROM  GP1001    TO  GP1999
___              FROM          TO
===== >>>>>>>>>>>>>>>> END OF POOL DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====

FILL IN POOL DEFINITION. CMDS: EDIT, SHPF                                                    10.18.54

```

The line has been copied.

Figure 229 Example - Copying A Line - After

```

----- POOL DEPT1-POOL                                TABLE $$POOL  -TP.S)
COMMAND ==>                                           SCROLL==> CRSR
+-----+
___ POOL NAME    DEPT1-POOL                                OWNER DP1
___ DESCRIPTION *****
___ DESCRIPTION * SCRATCH POOL FOR DEPARTMENT #1 *
___ DESCRIPTION *****
___ DESCRIPTION
___ DESCRIPTION
=====
___ VOLUMES      FROM  AP1001    TO  AP1999
___              FROM  BP1001    TO  BP1999
___              FROM  DP1001    TO  DP1999
___              FROM  FP1001    TO  FP1999
___              FROM  GP1001    TO  GP1999
___              FROM          TO
===== >>>>>>>>>>>>>>>> END OF POOL DEFINITION PARAMETERS <<<<<<<<<<<<<<<< =====

FILL IN POOL DEFINITION. CMDS: EDIT, SHPF                                                    10.20.08

```

Example 6

Insert a line in the Vault Definition screen.

Figure 230 Example - Inserting A Line - Before

```
VLT: VAULT1      LIB CTT.PROD.PARM      TABLE: $$VAULT
COMMAND ==>      SCROLL==> CRSR
+-----+
|  VAULT NAME  | VAULT1
|  LOCAL      | N
+-----+
|  DESC       | REMOTE VAULT #1
|  DESC       |
|  OWNER      | M89
|  ADDRESS    | LATHAM N.Y., EBERLE RD
|  ADDRESS    |
|  PHONE      | (518) 555-9627
|  SCHEDULE   | ONCE A WEEK
|  SCHEDULE   |
|  DOCMEM     | DOCVLT1      DOCLIB CTT.PROD.DOC
+-----+ GLOBAL CAPACITY +-----+
| I_ CAPACITY | 00000500     TYPE BOX      MEDIA TAPE      BOX SIZE 000400
|             | 00000200     TYPE SLOT     MEDIA CART
|             | 00000200     TYPE SLOT     MEDIA CART
|             |              TYPE          MEDIA
+-----+ >>>>>>>>>>>> END OF VAULT DEFINITION PARAMETERS <<<<<<<<<<<< =====

FILL IN VAULT DEFINITION. CMDS: EDIT, SHPF, DOC      10.23.19
```

The line has been inserted.

Figure 231 Example - Inserting A Line - After

```
VLT: VAULT1      LIB CTT.PROD.PARM      TABLE: $$VAULT
COMMAND ==>      SCROLL==> CRSR
+-----+
|  VAULT NAME  | VAULT1
|  LOCAL      | N
+-----+
|  DESC       | REMOTE VAULT #1
|  DESC       |
|  OWNER      | M89
|  ADDRESS    | LATHAM N.Y., EBERLE RD
|  ADDRESS    |
|  PHONE      | (518) 555-9627
|  SCHEDULE   | ONCE A WEEK
|  SCHEDULE   |
|  DOCMEM     | DOCVLT1      DOCLIB CTT.PROD.DOC
+-----+ GLOBAL CAPACITY +-----+
|  CAPACITY   | 00000500     TYPE BOX      MEDIA TAPE      BOX SIZE 000400
|             |              TYPE          MEDIA          BOX SIZE
|             | 00000200     TYPE SLOT     MEDIA CART
|             | 00000200     TYPE SLOT     MEDIA CART
|             |              TYPE          MEDIA
+-----+ >>>>>>>>>>>> END OF VAULT DEFINITION PARAMETERS <<<<<<<<<<<< =====

FILL IN VAULT DEFINITION. CMDS: EDIT, SHPF, DOC      10.23.46
```


AutoEdit Variables

CONTROL-M/Tape can automatically perform actions based on various events, such as a tape mount. The variety of possible actions is enhanced by the use of the AutoEdit variables supported by the AutoEdit facility.

AutoEdit variables can be specified in certain CONTROL-M/Tape DO statements (for example, DO SHOUT, DO COND) in place of values that change constantly. These variables are prefaced by a %% symbol to distinguish them from non-AutoEdit variables.

During processing, DO statements that can contain AutoEdit variables are scanned for AutoEdit variables (meaning, terms beginning %%).

When AutoEdit variables are detected, they are analyzed, edited, and automatically assigned appropriate values (eliminating the need to manually change the values). The DO statements are performed using the new, assigned values. The contents of the original DO statements remain unchanged.

Example

A rule contains a DO SHOUT statement with the message:

```
VOLSER %%VOL001 WAS CHECKED-IN
```

When the DO SHOUT is performed, AutoEdit variable `%%VOL001` is analyzed and resolved.

If the actual volser of the checked-in volume is 111222, the shouted message automatically appears as:

```
VOLSER 111222 WAS CHECKED-IN
```

AutoEdit variables are divided into two types:

- **System Variables**

AutoEdit system variables are predefined variables, provided with the product, that are replaced by values taken from the CONTROL-M/Tape environment.

For example, AutoEdit system variable `%%TDATE` is replaced by the date a specified event occurred.

- **User-Defined Variables**

In contrast to system variables, user-defined variables are variables that are created by the user. The user must therefore provide the value (or the tools to derive the value) that replace the variable. Values for user-defined variables are provided by DO SET statements. These values can be used as input for other INCONTROL products (for example, CONTROL-M).

For example, the user can define a variable `%%TAPELOG` whose value is supplied by System variable `%%JCLVOL`:

```
DO SET=%%TAPELOG = %%JCLVOL
```

User-defined variables can be any non-reserved alphanumeric string starting with `%%`. Characters `@`, `#`, `$`, and `-` are also valid. Lowercase characters are not translated to uppercase characters upon resolution.

AutoEdit System Variables

The following table lists the AutoEdit System variables supported in CONTROL-M/Tape. They can be used to insert environment information into the rule's operation.

Table 198 CONTROL-M/Tape AutoEdit Variables (part 1 of 2)

Variable	Description
%%ACCOUNT	Account value
%%CPUID	CPU ID
%%DATE	Date of handling the event (YYMMDD format)
%%DDNAME	DD name
%%DSEXPDT	Data set expiration date When %%DSEXPDT is <ul style="list-style-type: none"> ■ DATE, resolves to Julian format (YYYYJJJ) expiration date ■ CYCLE, resolves to number of cycles ■ LAST-ACC, resolves to number of days Note: During an OPEN event, the value of both %%DSEXPDT and %%DSEXPDT is the abend retention.
%%DSEXPDT	Data set expiration type Valid resolution values are: CATALOG, CYCLE, DATE, EDM, JCL-EXPDT, LAST-ACC, PERMANENT, RET-VAULT, SMS Note: Only the first retention is supported.
%%DSLABEL	Data set label sequence number
%%DSNAME	Data set name
%%ENV	Environment ID Valid resolution values are: SVCT, ONLC
%%JCLVOL	First five volumes, separated by commas
%%LASTACCS	Last access operation. Possible (valid) resolution values: READ, WRITE, CREATE
%%LBLTYP	Label type. Possible (valid) resolution values: NL, SL, NSL, SUL, BLP, AL, AUL
%%MEDIA	Media name
%%OWN001 – %%OWN999	Owner of volume
%%PGMNAME	Program name
%%POOL	Pool name
%%SLN001 – %%SLN999	Standard Label name of volume
%%STEPNAME	Step name
%%TDATE	Actual date the event occurred (YYMMDD format)
%%TIME	Time of handling the event (format hhmmss)

Table 198 CONTROL-M/Tape AutoEdit Variables (part 2 of 2)

Variable	Description
%%TJOBID	Job ID
%%TTIME	Actual time the event occurred (format <i>hhmmss</i>)
%%UCB	UCB address.
%%UNITGNAM	Generic unit name.
%%USERFLD	User field
%%USERID	User ID / Job name
%%VAULT	Location of the volume
%%VOL001 – %%VOL999	Volume serial number <i>%%vol001, %%vol002, ... , %%vol005</i>
%%VOLCOUNT	Number of volumes for the current data set
%%WHEN	Condition under which the event occurred. Possible (valid) resolution values: OPEN, CLOSE, MOUNT, CHECK-IN-VOLUMES, CLOSE-AFTER-ABEND, KEEP

Note the following about system variables:

- Some AutoEdit variables may contain blanks if the information is not available when the rule is matched.

For example, if a rule is matched when a Mount for SCRATCH is requested, the value of variable *%%VOL001* is not yet known. Therefore, its value is set to blanks.

- Correct use of the date and time variables requires that you distinguish between the date and time an IOA function was requested and the date and time the IOA function was performed:
 - Current date and time refer to the date and time the rule requested the IOA function specified in the DO command. This date and time is represented by System variables *%%TDATE* and *%%TTIME*.
 - Actual date and time refer to the date and time the requested IOA functions were actually performed by the IOA Functional monitor (subsequent to the issuing of the request by the rule). This date and time is represented by System variables *%%DATE* and *%%TIME*.
 - The values DATE / PREV / NEXT / ODAT, and so on, in the DATE field of a DO FORCEJOB or DO CONDITION statement are checked relative to *%%TDATE* values.

Rules of Variable Resolution

Multiple AutoEdit variables and constants can be joined together into complex terms. Resolution depends on the method used to join the component terms together. When a complex term contains multiple variables, those variables are resolved from right to left.

The methods of joining multiple variables together are described below.

- An AutoEdit variable can be appended directly to a constant.

Examples

Example 1

Table 199 Example - Appending AutoEdit Variable to a Constant

Action	Effect
Resolve:	SMF_TAPE%%VOL001
Assuming:	volser = 111111
Resolution:	SMF_TAPE_111111

- Two variables can be concatenated into two distinct but joined variables by placing a period between them.

Example 2

Table 200 Example - Concatenating Two Variables - 1

Action	Effect
Resolve:	%%PGMNAME.%%DATE
Assuming:	Program name = BACKUP and Date = 060600
Resolution Steps:	%%PGMNAME.060600
Final Resolution:	BACKUP060600

- Two variables can be concatenated into two distinct variables joined by a period by placing two periods between them.

Example 3

Table 201 Example - Concatenating Two Variables - 2

Action	Effect
Resolve:	%%PGMNAME.%%DATE
Assuming:	Program name = BACKUP and Date = 060600
Resolution Steps:	%%PGMNAME.060600
Final Resolution:	BACKUP.060600

Status Codes in the Inquire/Update Screen

System Programmer Status Codes

Below is a list of status codes (and their descriptions) that are displayed for volume records in the System Programmer (S) display type of the Inquire/Update screen.

The codes are hexadecimal (Hex).

Table 202 Volume Records Status Codes and Descriptions (part 1 of 2)

Status Field	Field Name	Field Code	Description
Status1 This field represents the first byte of the volume status.	VOLSTAT	80	Active
		40	Scratch
		20	Pending scratch
		10	Out of library (not vaulted)
		08	Vaulted
		04	External volume
		02	EDM controlled
		01	Deleted

Table 202 Volume Records Status Codes and Descriptions (part 2 of 2)

Status Field	Field Name	Field Code	Description
Status2 This field represents the second byte of the volume status.	VOLIND	80	Potential vault
		40	For future use
		20	Pending vault
		10	Recall back from a vault
		08	Hold before return to vault
		04	Stacked data sets not accepted
		02	In-use
		01	Incomplete data sets on volume
Status3 This field represents the third byte of the volume status.	VOLFLAGS	80	Returned from vault
		40	Volume dynamically added
		20	Record manually updated
		10	Volume processed under MVS restart
		08	Delete volume when expired
		04	Volume manually moved to a vault
		02	Single volume in vault and recall
		01	Volume resides in a robot
Status4 This field represents the fourth byte of the volume status.	VOLFLAG2	80	Vaulting by boxes required for this volume
		40	Converted Scratch volume
		20	CTTVTM frees the slot when the volume is recalled
		10	Volume capacity is in KB
		08	Volume is exported out of the VTS environment

Data Set Records

Below is a list of status codes (and their meanings) that are displayed for data set records in the System Programmer (S) display type of the Inquire/Update screen.

The codes are hexadecimal (Hex).

Table 203 Data Set Records Status Codes and Meanings

Status Field	Field Name	Field Code	Description
Status1 This field represents the first byte of the data set status	DSSTAT	80	Active data set
		40	In use
		20	Pending scratch
		10	Scratched data set
		08	Data set is stacked
		04	Data set is EDM controlled
		02	Closed under abend
		01	Data set is not stackable
Status2 This field represents the second byte of the data set status.	DSFLAGS	80	Data set accessed with the expression DISP=MOD
		40	Record created dynamically (input)
		20	Data set recreated
		10	Record manually updated
		08	Data set retention was set by a RETPD parameter in the JCL
		04	Data set to be deleted by CTTRTM
		02	Data set processed under DFSMS Checkpoint and Restart
		01	Data set scratched during conversion from another tape management system
Status3 This field represents the third byte of the data set status.	DSFLAG2	80	Internal RTM flag
		40	Data set created by batch stacking utility CTTSBD
		20	Data set capacity is in KB
		10	Data set in grace period (CATALOG)
		08	Data set in grace period (CYCLE)

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